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August 1994

# **DRAFT WILD AND SCENIC RIVERS SUITABILITY STUDY AND ENVIRONMENTAL IMPACT STATEMENT FOR SIX RIVERS ON THE DANIEL BOONE NATIONAL FOREST**



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**Daniel Boone National Forest Wild and Scenic Rivers Study Report  
and Draft Environmental Impact Statement**

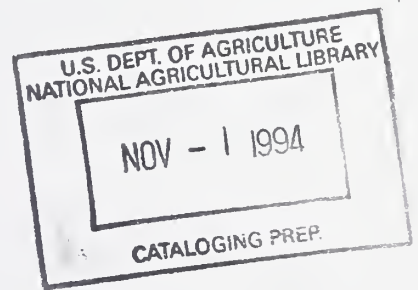
Jackson, Laurel, McCreary, Pulaski, and Whitley Counties, Kentucky  
Daniel Boone National Forest

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Secretary of Agriculture

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**ABSTRACT**

This Draft Environmental Impact Statement (DEIS) and Wild and Scenic Rivers Study documents the results of a study of segments of six rivers to determine their suitability for inclusion in the National Wild and Scenic Rivers System.

The study area includes Jackson, Laurel, McCreary, Pulaski, and Whitley counties, Kentucky. The four rivers studied in detail are the Cumberland River, Marsh Creek, Rock Creek, and the Rockcastle River. Two rivers, South Fork and War Fork of Station Camp Creek, were found not eligible for further consideration, and were therefore not studied in detail. The Daniel Boone National Forest Land Management Plan will be amended to remove them from the streams remaining to be studied.

There are five alternatives for recommending (designating) which, if any, of the eligible river segments should become part of the Wild and Scenic Rivers System. The five alternatives, are:

1. Recommend none of the rivers for designation (take no action).
2. Recommend all of the eligible river segments for designation.
3. Recommend the eligible river segments where land use activities in their watershed, now and in the foreseeable future, will not have significant impacts on outstandingly remarkable values for designation.
4. Recommend only the eligible river segments that are not already protected by Kentucky Wild River designation, for designation.

5. Recommend only the eligible river segments that have Outstandingly Remarkable Values representing the Physiographic Region, and which respond to public issues, for designation.

The preferred alternative is choice number five(5). It recommends that the eligible segments of the Cumberland River, Marsh Creek, Rock Creek, and Rockcastle River (except for the 1.9-mile segment of Marsh Creek south of State Road 478 bridge) are suitable and should be included in the National Wild and Scenic Rivers System. This would add 60 miles to the System. This alternative provides recognition and highlights the unique features of rivers that best represent this physiographic region of Kentucky. It adds representative values unique to eastern rivers to the Wild and Scenic Rivers System. This alternative provides additional incentives for State and private river protection measures of their values, through recognition under the Wild and Scenic Rivers Act.

Reviewers should provide the Forest Service with their comments during the review period of the Draft Environmental Impact Statement. This will enable the Forest Service to analyze and respond to the comments at one time and to use the information acquired in the preparation of the Final Environmental Impact Statement, thus avoiding undue delay in the decisionmaking process. Vermont Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519, 553 (1978). Environmental objections that could have been raised at the draft stage may be waived if not raised until after completion of the Final Environmental Impact Statement. City of Angoon v. Hodel (9th Circuit, 1986) and Wisconsin Heritages, Inc., v. Harris, 490 F. Supp. 1334, 1338 (E.D. Wis. 1980). Comments on the Draft Environmental Impact Statement should be specific and should address the adequacy of the statement and the merits of the alternatives discussed (40 CFR 1503.3).

Comments to be received by: DEC 09 1994

Comments can be sent to: Forest Supervisor  
Daniel Boone National Forest  
1700 Bypass Road  
Winchester, KY 40391

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## SUMMARY

This Wild and Scenic Rivers Study Report and Draft Environmental Impact Statement (DEIS) is to provide the President and Congress with a report on the suitability or non-suitability of segments of six rivers on the Daniel Boone National Forest for inclusion in the National Wild and Scenic Rivers System as required by the Wild and Scenic Rivers Act of 1968, and is consistent with appropriate legal and regulatory requirements.

The Nationwide Rivers Inventory (NRI), completed in 1982 by the United States Department of Interior, National Parks Service, originally identified rivers that were free-flowing and possibly eligible for further study as candidates for the National Wild and Scenic Rivers System. The Daniel Boone National Forest Land and Resources Management Plan (LRMP) and Environmental Impact Statement (EIS) declared that the rivers listed in the table in Appendix D of the LRMP (Appendix F of this document), except the Red River (covered by its own Study and Environmental Impact Statement), will be considered as possible eligible rivers for National Wild and Scenic River status.

Originally, segments of nine rivers were to be studied to determine their eligibility for this study: the Cumberland River, the Little South Fork of the Cumberland River, Marsh Creek, the lower Red River, Rock Creek, the Rockcastle River, the South Fork of the Kentucky River, and South Fork and War Fork of Station Camp Creek.

A preliminary evaluation, conducted by the Forest Service, of the Little South Fork of the Cumberland River, the lower Red River, and the South Fork of the Kentucky River determined that these river corridors contained mostly private land. Therefore, the Forest Service requested that the Division of Water for the Commonwealth of Kentucky be the lead agency for these segments' study.

An interdisciplinary team evaluated Station Camp Creek (South Fork and War Fork) for eligibility and classification and determined that neither the river system as a whole nor any segment met the eligibility criteria for designation as a National Wild and Scenic River.

The request to the Commonwealth of Kentucky to study the Little South Fork of the Cumberland, the lower Red River, and the South Fork of the Kentucky, and the determination that Station Camp Creek (South Fork and War Fork) was ineligible, left four rivers to be studied in detail, the Cumberland River, Marsh Creek, Rock Creek, and the Rockcastle River. These rivers run through Laurel, McCreary, Pulaski, and Whitley counties in eastern Kentucky.

News releases, letters to interested publics, six public meetings, and contacts made during the initial Eligibility and Classification Studies raised several issues, both from the public and from the Forest Service, to be addressed during the Rivers Suitability Study. The significant issues identified were:



1. Designation of the rivers as part of the National Wild and Scenic Rivers System may affect private land and the owners' ability to use the land as they choose.
2. Activities on private land outside the study corridors may have cumulative impacts on water quality.
3. Designation or non-designation may have impacts that affect threatened and endangered species.
4. Designation could increase use on the limited number of access facilities.
5. Designation would involve continued cooperation between State and Federal agencies concerning river corridor boundaries and land management direction.
6. Designation may restrict public use of the rivers and management of National Forest lands within the river corridors.

Other issues were raised during the scoping period and are addressed in this study report. Issues that were not found significant were:

1. Designation would eliminate opportunities for future impoundments on South Fork of Station Camp Creek.
2. The findings of the Eligibility and Classification studies may not have been appropriate.

See Appendix B for more details.

Five alternatives for how to designate the river segments were developed to respond to the significant issues identified during the public involvement periods. These alternatives are:

1. Recommend none of the rivers Wild and Scenic for designation (no action).
2. Recommend all the eligible river segments for designation.
3. Recommend the eligible river segments where land use activities in the watersheds, now and in the foreseeable future, will not have significant impacts on Outstandingly Remarkable Values, for designation.
4. Recommend only the eligible river segments that are not already protected by state Wild River designation, for designation.
5. Recommend only the eligible river segments that have Outstandingly Remarkable Values representing the Physiographic Region, and which respond to public issues, for designation.

Table 1, on page viii, shows which rivers would be recommended for designation under each alternative, and Table 2, on page ix, summarizes the environmental and social consequences of each alternative.

Table 1. Rivers Considered for Designation, by Alternative						
River	River Miles	Alternatives				
		(No Action) 1	2	3	4	5
Rockcastle	13.3		X			X
Cumberland	14.9		X			X
Marsh Creek	15.0		X		X	X*
Rock Creek	17.5		X	X		X
Total River Miles	60.7	0	60.7	17.5	15.0	59.7
* Segment III of Marsh Creek is 80% private. Exclude the 1.9-mile segment south of the County Road 478 bridge.						

**Table 2. Summary of Environmental Consequences**

<b>Factors Considered</b>	<b>(No Action) Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>
Water Quantity and Quality	Non-designation of the study rivers allow the consideration of proposals for impoundments on a site specific basis	Net improvement in water quality due to added emphasis on water quality. All designated river segments remain free-flowing.	Same as Alternative 1 for non-designated rivers. Same as Alternative 2 for Rock creek.
Private Lands	No effect.	Fee interest in lands would be acquired from willing sellers in the corridors. Encourage all landowners in corridors to manage lands for preservation of outstanding values. Scenic easements could be acquired.	Same as Alternative 2 for Rock Creek. No effect for non-designated rivers.
Social	No change to current lifestyles. Not responsive to public concern for preservation of free-flowing rivers and their outstandingly remarkable values.	Responsive to publics desire to preserve free-flowing river values. Not responsive to non-suitability determination of southern 1.9 mile segment of Marsh Creek.	Minor effects on local economics in the Rock Creek area. Same as Alternative 1 for non-designated rivers.
Fisheries	Impoundments could adversely affect stream fisheries while benefiting lake fisheries.	Changes in the free-flowing nature of rivers would not be permitted.	Same as Alternative 2 for Rock Creek; Marsh Creek would not have benefit of State or Federal designation.
Proposed, Endangered, Threatened and Sensitive Species	Impoundments could have an adverse effect on some species due to inundation.	Would prevent impoundments and increase monitoring for adverse user impacts.	Same as Alternative 2 for Rock Creek. Mitigation measures will be used to prevent impacts from concentrated recreation use.
Visual Resources	No effect.	No significant change. Protection of visual resources would be a concern for management activities on National Forest Lands.	Same as Alternative 1 for non-designated rivers. Same as Alternative 2 for Rock Creek.
Cultural Resources	No additional effect.	Mitigate indirect adverse impacts from increased recreational use.	Same as Alternative 1 for non-designated rivers. Same as Alternative 2 for Rock Creek.
Recreation	Possible impoundments could change free-flowing recreation to lake recreation activities.	River-oriented recreation would be protected. Short-term increase in use.	Same as Alternative 1 for non-designated rivers. Increased recreational use from designation concentrated on Rock Creek.
Minerals	No effect.	No significant change. Designation includes authority to acquire scenic easements for surface occupancy.	Same as Alternative 1 for non-designated rivers. Same as Alternative 2 for Rock Creek.
Vegetation Resources	No effect.	No significant change. Secondary to amenity values.	Same as Alternative 1 for non-designated rivers. Same as Alternative 2 for Rock Creek.

**Table 2.(Cont) Summary of Environmental Consequences**

<b>Factors Considered</b>	<b>Alternative 4</b>	<b>(Preferred Alt.) Alternative 5</b>	
Water Quantity and Quality	Same as Alternative 1 for non-designated rivers. Same as Alternative 2 for Marsh Creek.	Net improvement in water quality due to added emphasis on water quality. All designated river segments remain free-flowing.	
Private Lands	Same as Alternative 1 except an increased emphasis on acquiring land on Marsh Creek that is mostly private to protect outstandingly remarkable values.	Lands would be acquired from willing sellers within the corridors. Encourage all landowners within corridors to manage lands for preservation of outstanding values.	
Social	No change to current life styles. However, not responsive to local concerns about effects on use of private land.	Responsive to public's desire to preserve free-flowing river values. Responsive to local concerns about southern segment of Marsh Creek.	
Fisheries	Same as Alternative 1 for non-designated rivers. Same as Alternative 2 for Marsh Creek.	No changes, except that possible changes in the free-flowing nature of rivers would not be allowed.	
Proposed, Endangered, Threatened, and Sensitive Species	Same as Alternative 1 for non-designated rivers. Same as Alternative 3 for Marsh Creek.	Prevents impoundments and increases monitoring to avoid adverse user impacts.	
Visual Resources	Same as Alternative 1 for non-designated rivers. Same as Alternative 2 for Marsh Creek.	No significant change. Protection of visual resources would be a concern for management activities on National Forest Lands.	
Cultural Resources	Same as Alternative 1 for non-designated rivers. Same as Alternative 2 for Marsh Creek.	Possible indirect adverse impacts from increased recreational use.	
Recreation	Same as Alternative 1 for non-designated rivers. Same as Alternative 3 for Marsh Creek.	River-oriented recreation would be protected. Short-term increase in use.	
Minerals	Same as Alternative 1 for non-designated rivers. Same as Alternative 2 for Marsh Creek.	No significant change. Designation would give authority to acquire scenic easements for surface occupancy.	
Vegetation	Same as Alternative 1 for non-designated rivers. Same as Alternative 2 for Marsh Creek.	No significant change. Secondary to amenity values.	





## Chapter 1. Purpose of and Need for Action

The intent of the National Wild and Scenic River Act of 1968 (PL 90-542) is to preserve some of the nation's free-flowing rivers for present and future generations. The Wild and Scenic Rivers Act and Public Law 88-29 authorized the Nationwide Rivers Inventory (NRI) which was begun in the early 1970s by the United States Department of Interior (USDI), Heritage Conservation and Recreation Service (HCRS). The USDI Park Service later absorbed HCRS and completed the river inventory in 1982. The USDA-Forest Service adopted the NRI as its inventory of potential Wild and Scenic Rivers.

The Nationwide Rivers Inventory is an inventory of the rivers and river segments that are relatively natural or undeveloped. The NRI identified nine rivers on the Daniel Boone National Forest for future study as possible National Wild and Scenic River candidates. The Daniel Boone National Forest Land and Resource Management Plan (FLRMP) states that, in the decade beginning in 1985, one river per year will be studied to determine eligibility and classification.

To be eligible for possible inclusion in the National Wild and Scenic Rivers System, a river must be free-flowing and, with its adjacent land area, must possess one or more outstandingly remarkable values: scenic, recreational, geologic, fish and wildlife, historic, cultural, ecological or other value.

Classification is based on the condition of the river and adjacent lands at the time of the study. There are three classes of Wild and Scenic Rivers:

Wild Rivers -- Rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.

Scenic Rivers -- Rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.

Recreational Rivers -- Rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundments or diversion in the past.

The Forest Service is not the lead agency on listed rivers that do not have sufficient adjacent National Forest System land. Three rivers listed by the NRI were determined to have insufficient amounts of National Forest System lands. The Little South Fork of the Cumberland, the lower Red River, and the South Fork of the Kentucky River do not have enough National Forest land in the river corridor to be adequately managed by the Forest Service. The Commonwealth of Kentucky was requested to be the lead agency for the study of those rivers.

National Parks and Recreation Act (PL 95-625), amending the Wild and Scenic River Act, directed the Upper Red River be studied. The upper Red River was studied in a separate Environmental Impact Statement completed in 1988. The study recommendations have been introduced in congress for consideration at this time.

Eligibility and Classification Studies have been completed for the six remaining rivers for which the Forest Service was the lead agency. The Daniel Boone National Forest assigned an interdisciplinary Rivers Study Team to study the suitability of the six rivers for inclusion in the National Wild and Scenic Rivers System. Factors considered when determining suitability included:

- Characteristics that would make the river a worthy addition to the system.
- Outstandingly Remarkable Values
- Current status of landownership and use in the area.
- Reasonably foreseeable potential uses of resources enhanced, foreclosed, or curtailed if designated.
- The values which would be foreclosed or diminished if the area is not protected as part of the system.
- Public, State, and local government interest in designation of the rivers.
- Other concerns raised during the study.

In the Eligibility and Classification Studies two rivers--South Fork and War Fork of Station Camp Creek--were found not to be eligible. The segments of the remaining four rivers, the Cumberland River, Marsh Creek, Rock Creek, and the Rockcastle River were found eligible and were studied in detail.

The River Study Team identified several issues raised by the public and by Forest Service personnel to be addressed in this study. These issues were identified as a result of public contacts during the Eligibility and Classification Studies, six public meetings, news releases, and mailouts. The significant issues identified were:

1. Designation of the rivers as Wild and Scenic may affect private land and the owners' ability to use the land as they choose.
2. Activities on private land outside the study corridors may have cumulative impacts on water quality.
3. Designation or non-designation may have impacts that affect threatened and endangered species.
4. Designation could increase use on the limited number of access facilities.
5. Designation would involve continued cooperation between state and federal agencies concerning the river corridor boundaries and land management direction.
6. Designation may restrict public use of the river and management of National Forest lands within the river corridors.

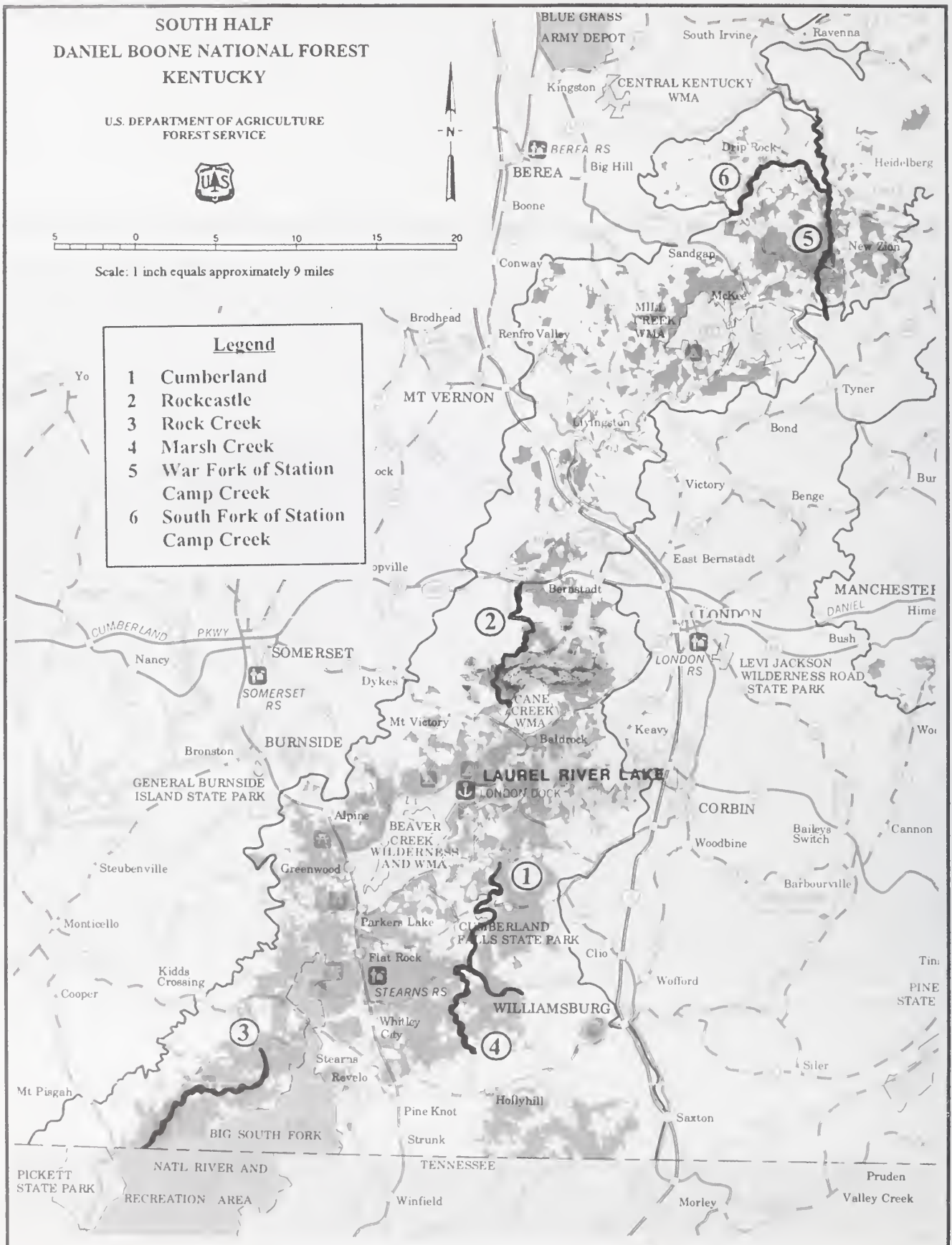


Significant issues identified by the public and by Forest Service personnel were included in the development of the five alternatives analyzed in this study. To determine the rivers' suitability for designation, these alternatives were analyzed as directed in Forest Service Handbook 1909.12, Chapter 8, and in the USDI and United States Department of Agriculture (USDA) jointly issued Final Revised Guidelines for Eligibility, Classification, and Management of River Areas. (See 47 Federal Register 34457, September 7, 1982.)





**Figure 2-1. Location Map for Study Rivers**



## Chapter 2. Affected Environment

### Location

The four segments of rivers to be studied in detail are located in the Daniel Boone National Forest in the eastern half of Kentucky. The rivers run through, or are on the borders of, Laurel, McCreary, Pulaski, and Whitley counties. The segments studied comprise 61 miles of perennial streams out of a total stream mileage of 35,800 miles on the Forest, of which 1,200 miles are perennial. Figure 2-1, on page 2-2, and the map in the back of this document, show the locations of the study rivers.

Note: Many of the technical and scientific terms in this chapter can be found in the Glossary.

The precise location of the river segments studied are:

Cumberland River. The segment found eligible is located on the border of McCreary and Whitley counties, Kentucky. The segment is a 14.9-mile section from Cane Creek south, to approximately four miles downstream from the Kentucky Highway 90 bridge.

Marsh Creek. The segment found eligible is located in McCreary County, Kentucky. The segment is a 15-mile section from the confluence of the Cumberland River to approximately 1.9 miles upstream of Kentucky Road 478.

Rock Creek. The segment found eligible is located in McCreary County, Kentucky. The segment is a 17.5-mile section from White Oak Junction to the Tennessee/Kentucky border.

Rockcastle River. The segment found eligible is located on the border of Pulaski and Laurel counties, Kentucky. The segment is a 13.3-mile section, from the Kentucky Highway 80 bridge south to the lower end of the Rockcastle Narrows.

### Watershed Area

#### Cumberland River

The study segment of the Cumberland River is an Order VI stream. Above Cumberland Falls, the river flows through a steep forested valley characterized by a succession of extensive shoals over bedrock and large rock rubble and long pools of moderate depths with sand and coal substrates. Below the Falls, the river flows through a narrower, gorge-like valley with steep banks and a series of distinct white water rapids and shoals (Soil Systems, Inc. 1980).

The watershed of the area drained by the Cumberland River above Cumberland Falls is about 1,977 square miles. More than 85% of the drainage basin is in Kentucky with the remainder in Tennessee. The length of the main channel is 179.7 miles, and there are 2,161 miles of stream in the basin as depicted on the U.S. Geological Survey (USGS) hydrologic unit map. The watershed is 81% forested.



## Rockcastle River

The study segment of the Rockcastle River is a VI order stream. The downstream portion is dominated by a steep, narrow, forested valley. The stream channel is characterized by large boulder constrictions, channel width pools formed from plunges, lateral bedrock scours, and turbulent cascades. These features make for a beautiful and challenging canoe trip through an area called "The Narrows". The valley broadens slightly upstream, the stream gradient decreases, and the substrate is composed of smaller rubble and cobble sized material. The gentle rapids and long pools make for a more methodical floating experience.

## Marsh Creek

Marsh Creek is a IV order stream above the confluence of Laurel Creek, then it becomes a Order V stream. The origin is at the northeast section of Scott County, Tennessee. The watershed covers approximately 22,242 acres. The stream flows in a northward direction from Scott County, TN, for approximately 24 miles and empties into the Cumberland River in McCreary County, KY.

The head waters consist of rolling to low mountains which are forested and areas of strip mine benches. The mid-section has farm lands that are nearly level and in need of conservation measures. The lower portion is under management by the U.S. Forest Service.

## Rock Creek

Rock Creek is a V order tributary to the South Fork of the Cumberland River and originates in northern Fentress County, Tennessee. The watershed is approximately 62.7 square miles with 43.7 square miles in Kentucky. Twenty two miles of Rock Creek is in Kentucky.

The headwaters of Rock Creek originates in Pickett State Park. The area is relatively undisturbed. Before the stream reaches Kentucky it flows through the Big South Fork National River and Recreation Area and once it crosses the State line it has been designated as a Kentucky State Wild River.

Rock Creek flows through three different types of valleys in Kentucky. A majority of the upstream portion, from the Tennessee line to just north of Hemlock Grove, can be classified as a narrow alluviated mountain valley (Walker and Bishop, 1991) with a dominate substrate of cobble and rubble. The next landform that the stream flows through can be characterized by broad alluviated valleys with sand and gravel substrate. There are several farms and pastures in this area (Bell Farm area). The downstream portion of Rock Creek, from the second old railroad bridge (River Mile 2.5) to the mouth flows through a steeply incised V-shaped valley. The channel substrate is dominated by boulders and bedrock that form large plunge pools.

## Climate

Kentucky lies in the path of moisture-laden, low-pressure systems that move up from the Gulf of Mexico. Average precipitation within the study area of the four eligible streams ranges from about 41 to 55 inches per year.

Measurable precipitation occurs 110 to 130 days per year. Although it may occur at any time of the year, the highest monthly rainfall is during March and July, and the lowest is during September and October. The area is also susceptible to extreme storms with 24-hour rainfall amounts averaging approximately 4.5 inches.

## Geomorphology

The Daniel Boone National Forest is located within the Knobs and Cumberland Plateau sections of the Appalachian Plateau Physiographic Province. All rivers involved in this study are located within the Cumberland Plateau section.

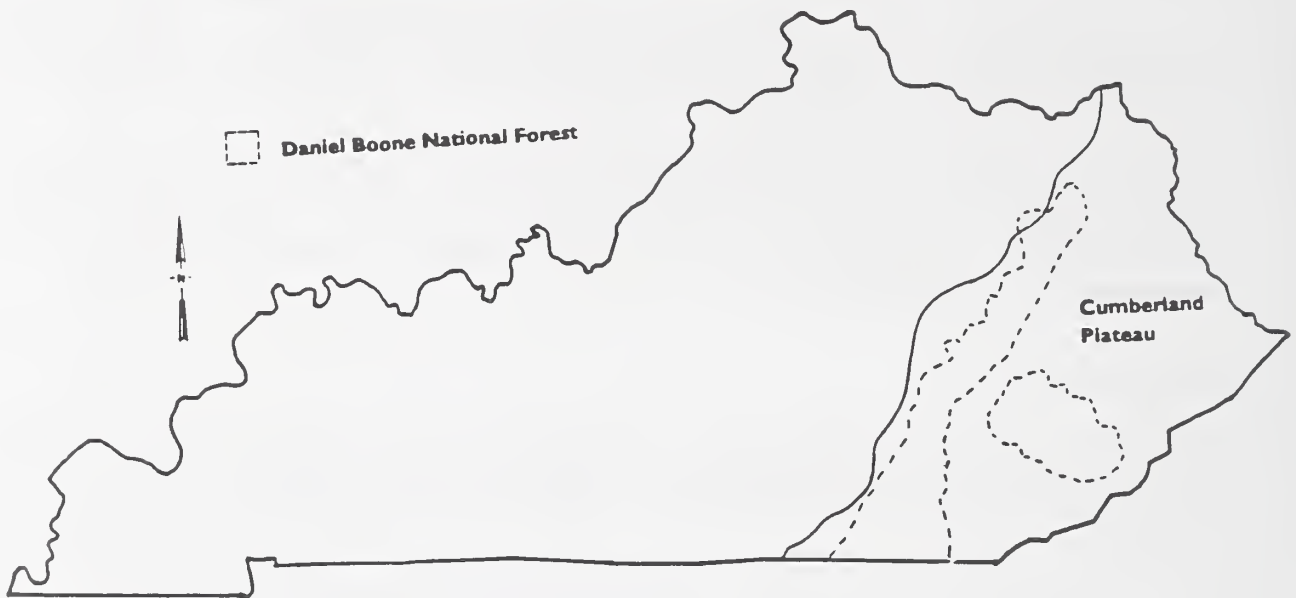
The Cumberland Plateau is an area of intricately dissected rocks of Pennsylvanian age in eastern Kentucky. It is bounded on the western edge by the Pottsville (or Cumberland) Escarpment, formed by resistant beds of sandstone and conglomerate in the lower part of the Pennsylvanian strata. In the Cumberland Plateau, wooded mountain crests extend to the horizon in all directions. The mountain slopes have been eroded from thick, flat-lying sequences of Pennsylvanian age coal-bearing clastic rocks. The ravines are tributary to sinuous, narrow, valley bottoms that wind between steep valley walls.

The major drainage pattern is dendritic. Major rivers, including the Big Sandy, Licking, Kentucky, and Cumberland, flow through the mountains. Locally, the river valleys widen to a mile or more; most people live on the flood plains and low terraces. High terraces, such as those associated with high-level fluvial deposits along the Kentucky River, are what is left of earlier valley bottoms.

Generally, the knife-edge crests of the mountains are as narrow and sinuous as the valley bottoms. Flatlands on either the ridgetops or the valley bottoms are commonly small. Most of the terrain is in steep slopes. Even though the topographic relief of this region ranges from 200 feet to over 2,000 feet, the land forms are similar. The mountain slopes have shale and sandstone below them and complex accumulations of rock fragments and weathered debris (colluvium) above them that move downslope by debris avalanche, landslide, creep, and sheet wash. Deeply weathered soils are uncommon and occur on isolated, nearly-level ridge crests and high-level terrace deposits. Cliffs of resistant sandstone cap many ridges and spurs. Scenic erosion remnants include pinnacles or chimneys, shallow caves known as rock houses, and arches or natural bridges.



Figure 2-2. Physiographic Regions in the Study Area



## Soils

Soils in the study corridors have a variety of physical, chemical, and morphologic properties that provide a range of capabilities and suitabilities for use and management. Land uses are based on these properties, depending on their physiographic position on the landscape, their slope, drainage, parent materials, and past management.

Soils occurring in mixed alluvial sediments (sand, silt, or clay deposited by streams) on terraces and flood plains are mostly well drained, have sandy loam to silty clay loam textures, ample moisture, and moderate fertility. Less extensive soils are somewhat poorly to poorly drained, or have a fragipan that restricts root growth and permeability. Wetness and flooding are major limitations to use and management, but these soils are an important and unique component of riparian ecosystems, a transition area between the aquatic and adjacent ecosystems. Soils in these areas possess distinctive beneficial resource values and functions important in flood protection, erosion control, and protection of water quality, and so forth.

On adjacent upland slopes, soils are usually forming in colluvial materials made up of a variety of rock fragments (limestone, acid sandstone, and shales) moved downslope by gravitational creep, landslides, and surface erosion. In cove positions along tributary and headwater mountain streams deep, well-drained, loamy soils have developed, offering very productive timber growing sites. Management activities on these soils generally are limited by slope steepness, stability risks, and high potential erosion rates.

On steep, concave to convex upper slopes, and on narrow to broad and flat to gently-sloping and steeply-rolling ridge tops, soils range from deep to shallow in depth. They are well-drained and have silt loam and sandy loam textures and a component of bedrock outcrop in some areas. Soil moisture supplies, particularly on south- and west-facing slopes, low fertility, restricted rooting depth, high erosion hazard, instability, and steep, dissected slopes are major limitations to use and management.

## Flood Plains, Wetlands, and Riparian Areas

**Flood plains** are the lowlands and relatively flat areas adjoining the rivers that are subject to a 1% or greater chance of flooding in a given year.

**Wetlands** are those areas that are inundated by surface or ground water with a frequency sufficient to support and under normal circumstances does or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth, and reproduction. Wetlands generally include swamps, marshes, bogs, and similiar areas such as sloughs, potholes, wet meadows, river overflows, mud flats, and natural ponds.

**Riparian areas** are transition areas between the aquatic ecosystems and the adjacent terrestrial ecosystems; identified by soil characteristics or distinctive vegetation communities that require free or unbound water.

## Minerals

The minerals available in the Daniel Boone National Forest are natural gas, oil, limestone, and coal. Coal, natural gas, and oil are the most important minerals on the forest. Limestone and clay are a potential resource but pale in comparison in value to coal, natural gas, and oil. There are four federal oil and gas leases in the designated Kentucky Wild River Corridor of the Rockcastle River.

There are approximately 3,544 acres of federal minerals within the study corridors. There are federal oil and gas leases on 1,290 of the 3,544 federal minerals located within the study corridors. There are 2,419 acres of reserved minerals and 4,227 acres of outstanding minerals within the study corridors. The acreage is shown in Table 2-1.

Table 2-1. Minerals in Study Area (in Acres)			
River	Federal Minerals	Reserved Minerals	Outstanding Minerals
Cumberland River	1446.75	672.05	755.16
Rockcastle River	1784.85	876.13	822.86
Marsh Creek	305.27	398.69	401.71
Rock Creek	7.43	472.09	2246.91

### Cumberland River

The main mineral resources in this area are coal, oil, and natural gas. Coal occurs as the Barren Fork seam. This seam outcrops at the mouth of

Indian Creek. This seam can occur in thicknesses up to 32 inches, but is commonly less than 18 inches thick. This seam is not considered to be of economic importance in the study area. The depressed price of coal, the lack of easy access to the seam, high sulfur content, and variable thickness makes this seam uneconomic to mine at the present time.

Oil and gas activity in the area has been sporadic at best. The primary formations of interest are the Mississippian Big Lime and Little Lime formations, and Cambrian Knox Dolomite. Oil and gas activity would not be affected by any Wild and Scenic River designations.

#### Rockcastle River

The mineral resources in this study area are coal, oil, and natural gas. The Halsey Rough coal seam was mined just west of the corridor boundary. The seam occurs at an elevation of 1,000 feet. The seam varies in thickness from 24 to 36 inches, and is normally stripmined. The Halsey Rough does not outcrop within the study corridor and will not affect the area.

Oil and gas development, as with the Cumberland River Study area, has also been sporadic. The formations of interest are the Mississippian Big Lime and Little Lime formations, and Cambrian Knox Dolomite. Presently there are parts of four Federal oil and gas leases located in the corridor. Each lease has a No Surface Occupancy restriction in the study area. Any Wild and Scenic River designation would not affect the leases.

#### Marsh Creek

The mineral resources in this study area are coal, oil, and natural gas. The Barren Fork coal seam outcrops approximately one mile from the Cumberland River, and lies within the study area. This seam occurs at an elevation of 900 feet, which is just above Marsh Creek. This would not be considered economic to mine due to its inaccessibility, high sulfur content, variable thickness, and low coal prices.

Oil and gas development, as with the Cumberland and Rockcastle Rivers, is sporadic at best. The low prices for oil and gas, and the wildcat nature of exploration results in a low level of interest in oil and gas development in the area. The formations of interest would be the Mississippian Big and Little Lime, and Cambrian Knox Dolomite.

#### Rock Creek

The mineral resources in this study area are coal, oil, and natural gas. Coal has been mined in two coal seams from the Stearns coal zone in the eastern part of the study area. The coal attains thickness of up to 53 inches, but the high sulfur content of these seams combined with the low price of coal makes this seam uneconomical to mine.

Oil and natural gas have been produced in the region since 1914. The wells have produced minor amounts of gas for household use, but little else. As with the Cumberland, Rockcastle, and Marsh Creek study areas, very few wells have been drilled near the Rock Creek area. The primary area of interest is the Beaver Creek sand of the Mississippian Fort Payne formation. The Corder sand is another zone of interest. This sand is located 150 to 260 feet above the Beaver Creek sand in the Fort Payne



formation. As with the previous three study areas, any oil and gas development should not be adversely affected by a Wild and Scenic River designation.

## Stream Flow

### Cumberland River

USGS maintains a stream gauging station within the study area at Cumberland Falls, Kentucky, about 0.2 miles upstream from the Falls. The mean annual discharge is 3190 cubic feet per second (cfs). The maximum mean discharge for a 7-day, 10-year frequency is 34,000 cfs; the low flow discharge at that frequency is 22 cfs for the main channel, and 0.0 for major tributaries. A maximum discharge of 59,600 cfs was recorded in January 1918; the minimum recorded was 4.0 cfs in September 1954. The maximum mean annual discharge is 52,000 cfs recorded in 1927, and the minimum is 1420, recorded in 1941. The mean monthly discharge is greatest during March (7290 cfs) and lowest during September (480 cfs) (Melcher and Ruhl 1984).

The average runoff is 21.91 inches per year. Most of the yearly runoff occurs as direct surface runoff, causing extreme fluctuations in discharge and a rapid response of the river to precipitation. The rapid surface drainage is due to a number of factors, including the steep topography of the drainage area, narrow restricted watershed, fairly thin weathered rock mantle and moderate permeability of the bedrock (Melcher and Ruhl 1984).

The minimum flow necessary to comfortably canoe the section of river above Cumberland Falls is about 500 cubic feet per second (cfs) as measured on the Cumberland Falls gauge, and the maximum flow is about 2000 cfs for an open canoe. The minimum flow necessary for canoeing the river below the Falls is about 300 cfs and the maximum is about 1,100 cfs. The minimum for rafting the lower segment is 100 cfs and the maximum is 13,820 cfs (Sehlinger 1978, Soil Systems, Inc. 1980). The maximum flow for a decked canoe is flood stage on both segments. The duration of annual flow within the study segment is sufficient for canoeing nearly all year.

### Rockcastle River

The steep, short slopes, coupled with the relatively imperious bedrock units in this watershed, contribute to rapid surface runoff (flashly). Maintenance or augmentation of flow by groundwater therefore, is very minimal. conversely, topographic, geologic and edaphic factors contribute to floods of short duration and flash flooding-commonly occurs. The river and it's tributaries recede to previous flow conditions within several days after achieving peak flow. The maximum recorded flood event occurred on December 9, 1978 (50,000) cfs) while the minimum flow was 0.8 cfs on September 9, 1957. Intense storms, generated from the SE, which pull a lot of moisture from the gulf, frequently produce a rapid response in flow due to the short travel-time within the basin. Such rapid peak discharges often cause flash floods, landslide events, and heavy sediment delivery to streams. The 10 year, 24 hour storm period may yield as much as 4.5 inches of precipitation and a three day total of 6.0 inches.

The U.S. Geological Survey (USGS) stream flow gauging station, located at Billows, Kentucky (49 years of record) indicates there is sufficient volume of flow during the recreational use season to support various water-related activities, and is a source for other consumptive and non-consumptive uses now occurring. Flows are highly variable though particularly, during the May through September period. Streamflow fluctuates seasonally with precipitation and evapotranspiration, but increases during November and remains higher through May. This is due to increased precipitation during the leaf-off period. The low-flow period generally begins in June as precipitation decreases and evapotranspiration rates increase and extends through late October or early November. Summer storms temporarily increase flow.

River discharge is within what is considered an optimum range for good canoeing (350-1400 cfs/3-5 feet stage) about 50 percent of the time near the vicinity of Billows, Kentucky. However, flow is adequate (220 cfs) to provide canoeist with a runnable water level for about 70 percent of the year and about 60 percent of the use season (see flow graph and flow data below). Proceeding up river the level of discharge correspondingly drops therefore, boating activity is more limiting, particularly during the summer months. Just above Livingston, Kentucky, where the watershed area is about 144 square miles the 7-day, 10-year low or base flow is 0 cfs and only 3 cfs at Billows, Kentucky normally between July through August.

#### Marsh Creek

Annual rainfall averages 47 inches with March being usually the wettest month and July the driest month. Summer temperatures range from the mid 70's to the mid 90's. Winter temperatures average from 30-50 degrees in the daytime to 20-30 at night. The growing season in the Marsh Creek area of McCreary County is usually around 180 days.

The land uses are broken down as follows: 11 percent cropland; 19 percent grass land; 56 percent woodland; and 14 percent other lands. Approximately 1,024 acres are located in the Daniel Boone National Forest. There are two non-recording surface water data-collection sites on Marsh Creek. Low Flow Characteristics of Kentucky Streams - 1984 by Don N. Sullivan identifies low flows of 1.7 cubic feet per second - 7 days 2 years and .5 cubic feet per second - 7 days, 10 years. The average annual stream flow is 63 cfs.

The lower portion of Marsh creek below Rattler Ford Bridge is the only section that has sufficient stream flow to allow canoeing during most of the year. The other sections of stream can be floated during high flows.

#### Rock Creek

Stream flow, the largest component of surface water in the Rock Creek watershed, is highly variable with time and place. It is made up of two components; direct runoff that supplies the volume of streamflow during flood periods, and base flow from ground-water storage that feeds the stream during periods of no direct runoff. The average annual runoff from this area can be approximated as the mean annual precipitation, about 50 inches, minus approximately 30 inches

of evapotranspiration. Average annual streamflow is approximately 1.8 cubic feet per second (cfs) per square mile, or 113 cfs for Rock Creek. Most floods occur in the winter and spring with about 84 percent occurring from December through April (Gaydos, 1982). A 50 year flood in the Rock Creek area would have a discharge of approximately 10,500 cfs (Hannum, 1976).

This half of Rock Creek is the only section that has sufficient stream flow to allow canoeing during most of the year. The other sections of stream can be floated during high flows.

## Water Quality

### Cumberland River

The water quality of the mainstream Cumberland River within the study area may be described as generally good. It fully supports all beneficial stream uses (recreation and fisheries), but is partially impacted as a result of elevated turbidity and siltation (Kentucky Division of Water 1986). The only point sources of pollution within the study segment are from private septic systems and three treated discharges into tributaries of the Cumberland River that range from 5,000 to 20,000 gallons per day (Kentucky Division of Water Wasteload Allocation Files, Upper Cumberland River Basin, ARB 02AA, April 1987). Nonpoint source pollution is not significant due to the largely forested watershed. Impacts to water quality within the study segment arise largely from the watershed outside of the study area.

According to STORET (1979-1986) data maintained by the Kentucky Division of Water, the water in the study segment of the river possesses moderate alkalinity and hardness. Dissolved oxygen is generally high, pH is circumneutral, while turbidity fluctuates from moderate to high levels. The chloride concentrations are consistently low, while sulfate is usually within the normal range. With regard to metals, copper periodically is found to be within the chronic toxicity range, and iron and zinc are occasionally elevated above state acute water quality standards.

Qualitative macroinvertebrate fauna samples collected from the Cumberland Falls sampling station in 1984 exhibited considerable taxa richness and habitat partitioning among most of the functional groups, especially the filterer and scraper organisms (Kentucky Division of Water 1986). The occurrence of phytoplankton characteristic of eutrophic lakes, however, suggests a trend towards nutrient enrichment not indicated by the physiochemical data.

Elsewhere in the watershed, water quality impacts arise from both point and nonpoint sources. Eight major urban centers with populations ranging from 2,599 (Pineville) to 12,251 (Middlesboro) occur within the drainage area. Elevated levels of fecal coliform bacteria from municipal sewage occur in some reaches upstream of the study segment. Principal among nonpoint sources are silt and sediment from surface mining, silviculture and construction. Water quality in the major tributaries ranges from exceptionally high (Dog Slaughter Creek, Eagle Creek) to high (Bunches Creek, Archers Creek) to degraded (Indian Creek, and Jellico Creek), the latter occurring near the upstream end of the study segment (Soil Systems, Inc. 1980).



The effects of mining on the watershed of the study area have been significant. Increased discharge and flood potential, greater stream flow variability and less favorable groundwater retention and storage have all been attributed to surface mining (Soil Systems, Inc. 1980). Acid mine drainage has diminished in recent years due to a decrease in deep mining operations, but an increase in surface mining has caused greater stream siltation. Impacts from agriculture are limited within the drainage basin due to lack of suitable land, but localized silvicultural operations are fairly numerous on the Cumberland Plateau (Kentucky Division of Water 1986).

Although not having a direct impact on water quality, the deposition of solid waste in and along the banks of the Cumberland River causes a significant impairment of the aesthetic environment of the study area. Most of this refuse originates from improper disposal of household garbage upstream of the study area.

#### Rockcastle River

The ambient water quality in the basin is generally considered very good and normally free of significant pollution. The greatest potential for low water quality occurs during the summer months when streams are at base-flow and water temperatures are warm and when high turbulent flows are capable of transporting heavy sediment and pollutant loads. Past as well as current land use activities (e.g. coal mining, quarrying, agriculture, residential areas and town sites) may introduce elevated levels of Fe, Mn, SO<sub>4</sub>, nitrate, phosphate, pesticides, fecal water, sediment and other pollutants to the river (See water quality for selected parameters in Appendix C). The last obvious pollutant problem apparent to River visitors is floating debris, a growing aesthetics problem. Primarily domestic garbage consisting largely of plastic containers, etc. that collect during spring floods along the banks and eddies in the main current.

The main beneficial uses in the Rockcastle River include recreation and fisheries. There is also a significant mussel population. Even though the stream occasionally experiences elevated pollutant loads they are not high enough to adversely effect the beneficial uses.

#### Marsh Creek

Water quality of Marsh Creek was surveyed by the Office of Appalachian Studies in 1969. The report identifies that acid mining drainage, high levels of Fe (iron) and Al (aluminum), and suspended solids have adverse impacts on water quality and aquatic populations. The sources of these non-point pollutants are the strip mining activities in the upper portion of the watershed and runoff from the agriculture lands. A more recent study by USGS suggests that these impacts have decreased through the years. Marsh Creek still has the highest mean iron, manganese, and sulfate concentrations of any of the four proposed wild and scenic rivers. However, these parameters which are indicators of acid mine drainage, are within state standards and do not appear to be adversely impacting the beneficial uses (i.e., recreation and fisheries).



## Rock Creek

A large majority of this watershed is forested with most of it in public ownership. In addition, there are a few dispersed subsistence farms, a few homes, and some mining activities in the lower portion of the basin.

Water quality varies greatly in this watershed. The portion of the stream below White Oak Creek (segment 1) has been drastically impaired by coal mining. This segment supports very little if any aquatic life due to the low pH (4-5) and elevated concentrations of heavy metals. Above White Oak Creek the water quality is better and improves as you progress upstream. The water quality of the stream segment from White Oak Creek to just downstream of the second old bridge (segment 2) has been slightly degraded by past mining activities and solid waste but is fairly typical of other streams in the region. However, the turbidity and sediment load is good for a stream of this size. The water quality upstream to the Tennessee line (segments 3 and 4) is very good and is one of only a few this significant in the Cumberland Plateau. This is especially true when looking at turbidity and suspended sediment. The stream above White Oak Creek fully supports the beneficial uses of recreation and fisheries.

## **Fish and Wildlife**

The Forest Service, with the cooperation of the Kentucky Department of Fish and Wildlife Resources, manages habitat on National Forest System lands. A systematic inventory has not been done in the study areas. Information in this study is from the best information available at the time of this study. More comprehensive studies of individual rivers in the study would have been cost prohibitive. Habitat located along the 60.7 miles of study rivers and their corridors supports a diverse terrestrial and aquatic fauna of both game and non-game species known to occur in the Cumberland Plateau region.

Approximately 30 species of amphibians, 31 species of reptiles, 29 species of mammals, 44 species of birds, 101 species of fish, and 43 species of mussels are either known to breed or have been observed or documented in the study rivers and their corridors. Several unconfirmed reports of the Eastern cougar and the Black bear have been made by the local people as occurring in or near the Rock Creek and Rockcastle River study corridors.

All corridors are open to hunting and fishing. White-tailed deer, wild turkey, ruffed grouse, and gray squirrel are the most popular species hunted; rainbow trout, smallmouth bass, walleye, and catfish are favored in creels.

## **Threatened, Endangered and Sensitive Species**

Several terrestrial and aquatic plant and animal species of special concern are known to exist in the study river corridors. This includes two Federal Endangered species, two Threatened species, 27 Forest Sensitive, and six Proposed Forest Sensitive species. A detailed list of species and their general locations can be found in Appendix D.

Significant cliffline species such as Rafinesquii big-eared bat, Plecotus rafinesquii, have been located along all study river corridors. The largest known site for hibernation in the Forest is located in the Rockcastle River study corridor. Marsh Creek is the only known creek upstream of Cumberland Falls to have mussel. Marsh Creek also contains the largest known and most stable population of Cumberland Elktote mussel, Alasmodonta atropurpurea.

Several colonies, both active and inactive, of the Red-cockaded woodpecker are located outside of, but very near, the study river corridors. Possible linkage and management opportunities exist between colonies which would involve the Cumberland River study corridor. Historical records of Peregrine falcons and Common ravens have reported these species as suspected breeders along the cliffs of the Rockcastle River. Presently, no breeding or resident individuals of these birds are known. However, the habitat is present should they reestablish themselves to the area.

The first known occurrence in Kentucky of Cumberland sandwort, Arenaria cumberlandensis, is within the study corridor of Rock Creek and the only known occurrences of Virginia spirea, Spiraea virginiana, are in the Rockcastle River drainage area,

## Vegetation

Vegetation in the river corridors is typical for areas in or adjacent to the Southern Cliff section of the Kentucky Cumberland Plateau. An oak/hickory or oak/hickory/pine forest dominates the landscape. Within this forest, numerous pastures, croplands, and other openings provide many kinds of vegetation and habitat.

The oak/hickory forest canopy usually consists of white, chestnut, black, scarlet, and northern red oaks; several species of hickory; red maple; blackgum; and tuliptree.

The oak/hickory/pine forest type is similar with the addition of shortleaf, Virginia, and, rarely, pitch pines, and the usual inclusion of tuliptree. On some ridges, shortleaf or Virginia pine may comprise 70% or more of the forest canopy. On slopes or ridges with calcareous soils, chinquapin, white, northern red, black, and Shumard oaks; and sugar maple, black walnut, and buckeyes may be the dominant species. On lower slopes, stream terraces, streambanks, and occasionally on sandbars, sycamore, river birch, sweetgum, elms, beech, and ashe may dominate. These species may also occur as scattered individuals, along with black cherry and black walnut on slopes and some ridges.

Species of undergrowth are numerous, and many are found in all forest types. More common species include flowering dogwood, redbud, red maple, serviceberry, sassafras, lowbush blueberry, highbush blueberry, huckleberry, arrowwood, and rusty blackhaw. In riparian areas, umbrella magnolia, spicebush, leatherwood, alder, hazelnut, witch-hazel, blue beech, black and carolina willows, and river birch dominate the undergrowth.

Herbaceous species commonly found in the corridors are hepatica, trillium, violets, honeysuckle, sunflowers, asters, pussytoes, goldenrods, buttercups, snakeroots, blue cohosh, hawkweeds, Jacob's ladder, little brown jug, wild ginger, spring beauty, pink and yellow lady's slippers, crane fly orchid, club mosses, and numerous ferns.

Grasses include native bluegrasses and brome grasses, big bluestem, little bluestem, indian grass, purpletop, panic grasses, broomsedge, cane, and exotic or cultivated grasses such as fescue, orchard grass, eulaly grass, Kentucky bluegrass, and cereal grains.

Most of the corridors are forested with stands 70-80 years old. Along several corridors, indications of past management practices are present. Regeneration areas, plantations, and salvage operations are visible in some areas. Recent wind storms have left pockets of downed or damaged timber along the Rockcastle and Cumberland corridors.

### **Grazing**

Grazing is a minor use of National Forest land within or adjacent to the study corridors. The only permitted grazing on National Forest land is in small fields in the Rock Creek corridor, in the Bell Farm area, and the four small fields in the Marsh Creek Range Allotment. Total acreage permitted is less than 100 acres. The only areas with any significant grazing are on private land in the headwaters of Marsh Creek, and in some drainages of the Cumberland River.

### **Access and Structures**

The following is a brief description of the locations of roads, bridges, fords, power lines, and structures in the study area.

#### Rockcastle River

State Highway 80 bridge is the northern boundary of the study area.

The river can be accessed by roads through private land in the Long Point area, and Bolthouse Ridge area. North of the Rockcastle Narrows are Forest Development Roads (FDR) 5064 and 5064A, which parallel the river for a short distance. On the east side, FDR 457A parallels the river for access to a private tract on the river. Further access is available through Blair Branch on FDR 4117, and north of Shop Branch on FDR 4135. Both 4117 and 4135 are primarily 4-wheel-drive-only roads.

There are one or two residences on private tracts within the corridor.

#### Cumberland River

Cumberland Falls State Park has a campground, lodge, cabins, and numerous trails within the corridor. There are one or two fishing cabins along the shore on private land.

State Highway 90 bridge crosses the river above Cumberland Falls.

In the section north of Cumberland Falls there are several user-developed roads used by off-highway vehicles (OHV) to access the river. The Sheltolee Trace National Recreation Trail parallels the river for approximately 3 miles.

In the section South of Cumberland Falls, on the east side, FDR 536 accesses the river at Long Branch. From Long Branch, FDR 4211 and 4211A



parallel the river for approximately 5 miles, and are used extensively by OHV's. Further south, FDR 4221 accesses the river at Crow Creek, FDR 534A accesses the river at Cantrell Creek, and County Road 534 parallels the river for approximately 1 mile.

In the western side, south of Cumberland Falls, there are user-developed OHV routes in the Upper and Lower Mulberry Branch area, the Blue Bend area, and routes developed to access the river from the New Liberty area. In addition, the Sheltolee Trace National Recreation Trail parallels the river for approximately 3 miles.

#### Marsh Creek

There are two bridges that cross the creek: Rattler Ford Bridge on County Road 679 and the State Route 478 bridge.

There are numerous user-developed trails and primitive, woods roads that provide access to the corridor.

#### Rock Creek

Rock Creek Road (County Road 566) and later FDR 137 parallel the creek, and range in distance from 30 feet to 1,500 feet from the creek. Four bridges cross Rock Creek on Rock Creek Road.

Bell Farm Campground was designed and built for horse use with five group campsites, Great Meadows Campground with 19 campsites, and the Hemlock Grove Picnic Area are within the corridor.

The Sheltolee Trace National Recreation Trail parallels Rock Creek for 4 miles on the east side of the creek.

There are 63 well-defined pull-offs and 17 primitive campsites actively being used within the corridor.

There are over 20 houses in the corridor in the Bell Farm area, and five houses in the White Oak Junction area. There is a power line that services the houses in the Bell Farm area that crosses Rock Creek in three places and parallels the creek for approximately 1 mile.

#### Recreational Activities

The four study rivers and the associated corridors offer a wide variety of recreational opportunities. Recreational uses involving the rivers include fishing, canoeing, kayaking, rafting, tubing, and swimming. The river corridors attract recreational uses such as bank fishing, hunting, camping, picnicking, viewing nature, and use of trails. Trail use within the corridors, on both Forest Service-developed and user-developed trails, is by hikers, horseback riders, OHV users, and mountain bicyclists.



The Daniel Boone National Forest is considered an urban forest due to its proximity to large cities and populations. Within a 250-mile radius of the center of this study area are large population cities such as Cincinnati and Columbus, Ohio; Charleston and Huntington, West Virginia; Roanoke, Virginia; Charlotte, North Carolina; Atlanta, Georgia; Knoxville and Nashville, Tennessee; Indianapolis, Indiana; Lexington and Louisville, Kentucky; and more (see Figure 2-3) on page 2-10.

In addition, the Daniel Boone National Forest is a focal point for use by large numbers of urban-based groups. National trends indicate that the rate of population growth has slowed; however, these trends also indicate that outdoor recreation opportunities at the urban and local level will be even more important in the future.

According to national trends, people will travel up to 130 miles on the average on an overnight recreation trip. Population projections acquired by the Forest Service's Regional Office in Atlanta, Georgia, indicate that the population within a 150-mile radius of the River Study area is currently 9 million and is expected to increase to 9.2 million by 1995.

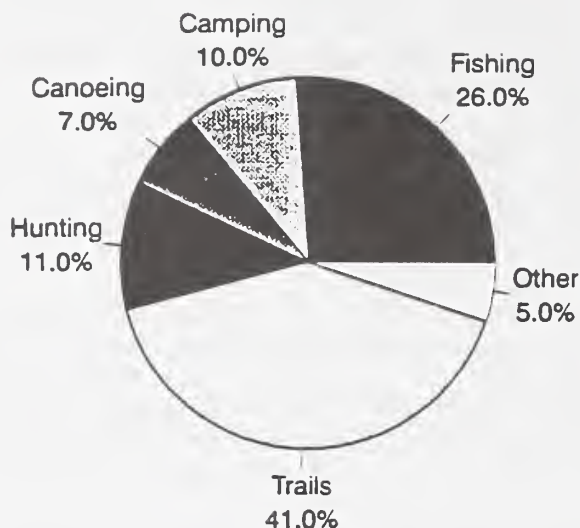
A literature search was requested through INFOSouth, A Southern Forestry information service for trends and information on river use and the effects of designation as a national Wild and Scenic River. In addition, Charlie Huppuch, Rivers Specialist, and Paul Wright, Marketing Specialist, with the U.S. Forest Service, Southern Region, and various river managers were contacted for information on river use and trends.

There have been no major studies specifically on trends in river recreation after designation. The most comprehensive study describing trends in river use were found in the publication, An Analysis of the Outdoor Recreation and Wilderness Situations in the United States: 1989-2040.

Presently, the national trend is that the number of recreational visits have increased while hours of use have remained stable or increased only slightly over the past 10 years. Extended, long-distance vacations are being replaced by more frequent, close-to-home recreation trips. A review of Forest data on selected river-related activities seems to support this trend. Forest Service Ranger Districts observations indicate a small but steady rise in numbers of users in the river corridors, while the reports of recreation visitor days (RVD), a function of numbers of users and the amount of time they spend on an activity, have been steady or have even declined in river-related activities (see Appendix E).

According to Forest Service Ranger District observations, trail use, fishing, camping, hunting and canoeing are the most frequent recreational activities (see Figure 2-4) and use is concentrated around the river access routes.

Figure 2-4 TYPES OF USE ON STUDY RIVER(%)



	Fishing	Camping	Canoeing	Hunting	Trails	Other**
Upper Cumberland	20		5	10	65	
Lower Cumberland	20		10	10	60	
Rockcastle	20	10	5	10	55	
Rock Creek	40	30	5	5	5	15
Marsh Creek	30	10	10	20	20	10
Average	26	10	7	11	41	5

\*Based on Ranger District observations

\*\*Includes swimming, car washing, baptisms, etc.

In the river corridors, trail use is the most frequent type of recreation. In recent years there has been a significant growth in OHV use within the river corridors. In addition to Forest Service-developed trails along portions of the rivers, there are numerous old-woods-roads being used by OHVs to access the rivers. OHV users have also developed a connecting system of trails which are not part of the existing Forest Service trail system. OHV are commonly used to get to favorite fishing, hunting, or camping sites. Hiking, horseback riding, and mountain bicycle use occur primarily on developed National Forest trails.

Fishing is the second most frequent activity in the river corridors. Activities associated with fishing include dispersed camping, picnicking, hiking, and canoeing.

The river corridors provide excellent wildlife habitat, and are heavily used by hunters. Most hunters have favorite campsites along the rivers and return to those sites each year.

The following is a general description of the recreation that occurs on each river segment.

#### Rockcastle River

This river is considered one of the most popular runs for canoes and kayaks. The eligible section is rated Class II by the International Scale of River Difficulty, with occasional Class III and IV rapids. Difficulty levels increase or decrease as the water level fluctuates seasonally. A section of the Rockcastle Narrows Trail is within the corridor and is used by canoeists to portage around the narrows.

Current canoe and kayak use is limited by the number of useable access points. Although, hiking, horseback riding, and fishing use seem to be constant, OHV use within the corridor is increasing.

Fishing, both on shore and from boats, is a common use. Anglers, hunters, hikers, and others use the river corridor for primitive camping.

Two commercial outfitters have Special Use permits to use the Rockcastle River from the city of Livingston to Bee Rock Campground. One outfitter provides canoes and shuttle service. The other provides canoes, shuttle service, and guided rafting trips.

Bee Rock Campground, located just outside the eligible section on the downstream end, is the only developed recreation site adjacent to the river corridor. Associated with this campground is a boat ramp and the trailhead for the Rockcastle Narrows trail.

#### Cumberland River

The eligible section of this river will be discussed in two sections: upstream from Cumberland Falls, called the Upper Cumberland, and downstream from Cumberland Falls, called the Lower Cumberland.

##### Upper Cumberland

This segment is rated Class II by the International Scale of River Difficulty, with two marginal Class III rapids.

Current canoe and kayak use is limited by the number of useable access points. Although hiking and fishing use seems to be constant, OHV use and horseback riding within this segment is increasing.

A section of the Sheltowee Trace National Recreation Trail is in this segment.

Fishing, both on shore and from boats, is a common use. Anglers, hunters, hikers, and others use the river corridor for primitive camping.

Cumberland Falls State Park, which includes Cumberland Falls, is the only developed recreation site adjacent to the river corridor. The park is located at the northern edge of this segment. The Highway 90 bridge crosses the Cumberland River upstream of Cumberland Falls. The picnic area just below the bridge is used as the last take-out point before Cumberland Falls.

#### Lower Cumberland

This short segment is rated Class III by the International Scale of River Difficulty. This river segment is characterized by challenging whitewater, but its use is limited by the long stretch of flatwater in the Upper Lake Cumberland pool before the closest takeout at the Mouth of Laurel boat ramp. Use on this segment consists primarily of inflatable rafts, with additional use by open canoes and kayaks.

Current canoe and kayak use is limited by the number of useable access points and the long stretch of flatwater. Although hiking and fishing use seems to be constant, OHV use in this segment is increasing.

One commercial outfitter has a Special Use permit to use the Lower Cumberland from Cumberland Falls to the Mouth of Laurel boat ramp. This outfitter provides guided raft trips, transport by a pontoon boat across the flatwater, and bus transport back to Cumberland Falls State Park.

A section of the Sheltowee Trace National Recreation Trail is in this segment. An Adirondack Shelter is located at Star Creek on the Sheltowee Trace Trail.

Fishing, both on shore and from boats, is a common use. Anglers, hunters, hikers, and others use the river corridor for primitive camping.

#### Marsh Creek

Segment I of Marsh Creek (Rattler Ford Bridge to the confluence with the Cumberland River) is the only segment that is navigable by canoes and kayaks during low flow periods. Segment II (Rattler Ford bridge south to the Highway 478 bridge) requires high water levels to be navigable by anything other than inner tubes. The take-out point for users of Marsh Creek is the picnic area at Cumberland Falls State Park.

Fishing from boats in the area closest to the Cumberland River and shore fishing downstream of the Highway 478 bridge, is common. Anglers, hunters, hikers and others use the river corridor for primitive camping.

River uses, along with hunting and hiking, seem to be constant. OHV use, however, is increasing.

#### Rock Creek

Recreation uses in the Rock Creek corridor consists of swimming, fishing, hunting, hiking, scenic driving, camping, and OHV use. Local baptisms also take place in the waters of Rock Creek.



Access is plentiful and consists of 22 miles of road in the 17.5-mile-long corridor. The Rock Creek Road, County Road 566, and the Woods Road, FDR 137, combine to parallel Rock Creek for its entire length.

Forest Service Recreation Information Management (RIM) System data shows that the Stearns Ranger District received a total 516,700 visits in 1988. It is estimated that more than 90% of these visits were in connection with activities in the Rock Creek corridor. Visits to the general area have increased dramatically since the opening of the Big South Fork National River and Recreation Area (NRRA). Park Service visitor records show a 30% increase from 1988 to 1990. Use of the Rock Creek corridor is increasing, due in part to this increase in visitors in the area.

Rock Creek receives frequent regional attention through the publication of articles in hunting and fishing magazines extolling its beauty and quality fishing experience. Year-round monthly stocking with rainbow trout ensures the continued interest in recreational fishing.

There are three Forest Service-developed recreation sites within the Rock Creek corridor:

Bell Farm Horse Camp - This heavily used campground provides the focal point for horseback riding on the district. On high-use weekends, there are as many as 200 people using this camp.

Hemlock Grove Picnic Area - This day-use area is heavily used on weekends throughout the summer for picnics and reunions.

Great Meadows Campground - The 20 campsites in this campground are consistently full throughout the summer. Anglers and hunters extend this use into the spring and fall.

There are 63 well-defined pull-off parking sites, and 17 well-defined and heavily-used primitive campsites along Rock Creek. These sites are used by the full spectrum of recreation users.

The Sheltowee Trace NRT parallels Rock Creek for 4 miles from the Kentucky/Tennessee border to the Hemlock Grove Picnic Area.

## **Navigability**

Kentucky law states that a navigable stream is considered a public highway. Further legal opinions of the Kentucky Attorney Office of General Counsel state:

If the stream in its natural condition is capable of being used to float rafts, logs, etc., and has been used for that purpose, the public has an easement in it and the right to so use it, but not in such a manner as to destroy by neglect or wantonly the property of those on its banks.

Navigability has been further defined:

...to include streams which flow so little as to be capable of carrying only a canoe only during parts of the year.

All river segments in this study meet these criteria. However, these criteria have not been tested in court.

### Wild and Scenic Rivers in the Region

At present, the only river designated as a National Wild and Scenic River within the Cumberland Plateau region is the Obed River, Tennessee. This river is managed in the National Park Service System.

Other Federally-designated rivers managed under the Wild and Scenic Rivers Act within a 250 mile radius of Pulaski County, roughly in the center of the area under study, and rivers in Kentucky with State status are listed in table 2-2 and displayed in Figure 2-3

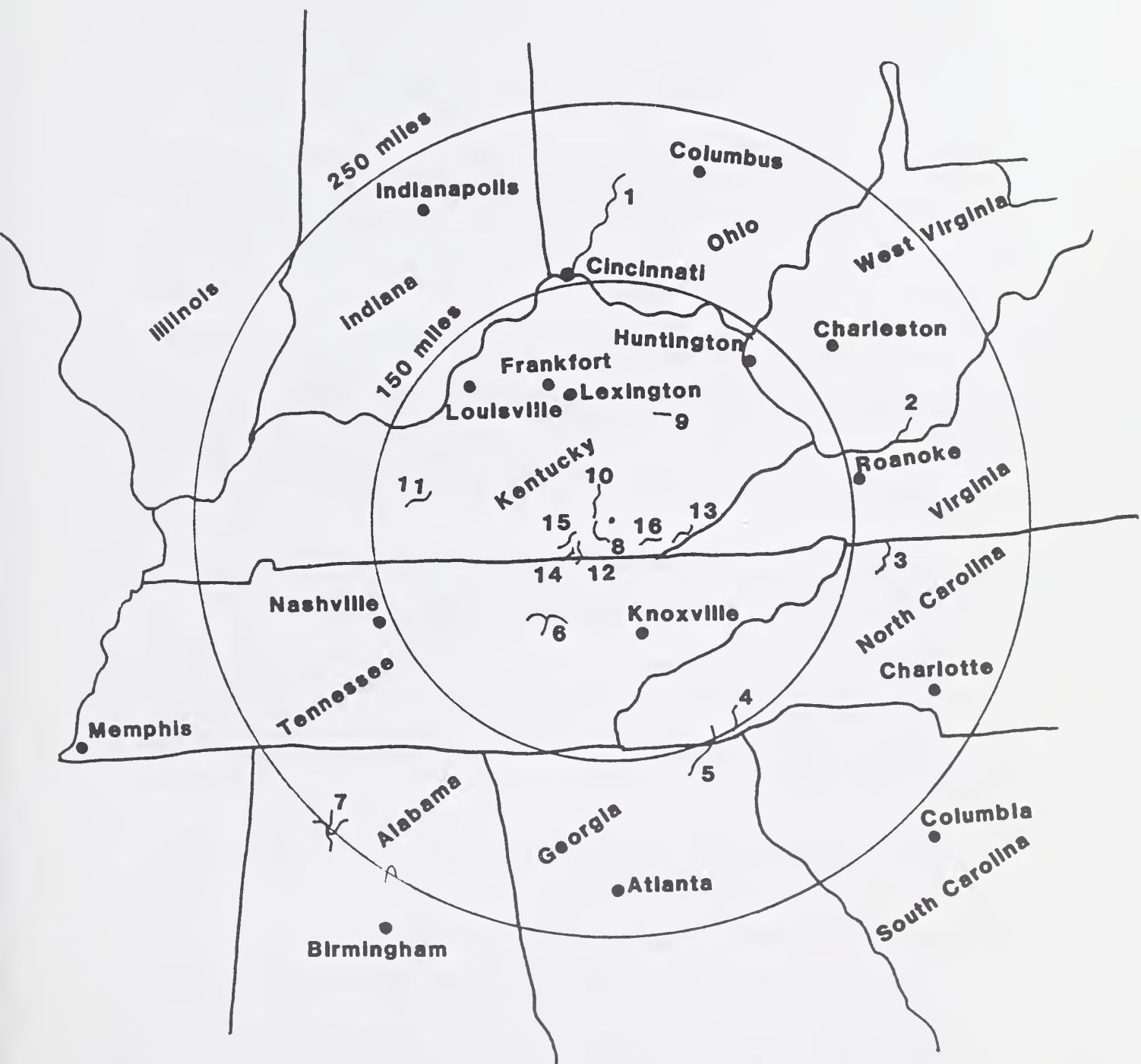
Table 2-2. RIVERS WITH FEDERAL WILD AND SCENIC RIVERS STATUS WITHIN 250 MILE RADIUS AND KENTUCKY STATE STATUS

MAP KEY	RIVER	STATUS*	MANAGING AGENCY
1	Little Miami River, OH	National	Ohio Department of Natural Resources
2	Bluestone River, WV	National	U.S. National Park Service
3	New River, South Fork, NC	National	U.S. Forest Service
4	Horsepasture River, NC	National	U.S. Forest Service
5	Chattooga River, NC, GA, SC	National	U.S. Forest Service
6	Obed River, TN	National	U.S. National Park Service
7	Sipsey Fork, West Fork River, AL	National	U.S. Forest Service
8	Cumberland River,	State	Kentucky
9	Red River	State	Kentucky
10	Rockcastle River	State	Kentucky
11	Green River	State	Kentucky
	Big South Fork of the		
12	Cumberland River**	State/National	Kentucky
13	Martins Fork	State	Kentucky
14	Rock Creek	State	Kentucky
	Little South Fork of the		
15	Cumberland River	State	Kentucky
16	Bad Branch of Poor Fork	State	Kentucky

\* National = National Wild and Scenic River designation  
State = Kentucky Wild River designation

\*\* Big South Fork of the Cumberland is also designated as a National River and Recreation area, managed by the USDI-Park Service.

Figure 2-3. RIVERS WITH FEDERAL WILD AND SCENIC RIVERS STATUS WITHIN 250 MILE RADIUS AND KENTUCKY STATE STATUS



## Water Rights

Kentucky regulations state that "Water occurring in any stream, lake, groundwater, subterranean water, or other body of water in the Commonwealth which may be applied to any useful and beneficial purpose is hereby declared to be a natural resource and public water of the Commonwealth...."

Kentucky courts have applied the Reasonable Use doctrine, which entitles the riparian land owner use of the water as long as it does not unreasonably interfere with other owners' rights to do the same.

Kentucky case law has consistently ruled that the riparian land owner owns the bed of the stream to the "thread of the stream." The thread of the stream is defined as the midpoint between the low water mark of the opposite shores.

## Proposed Water Resource Projects

### Marsh Creek Rechannilization Project

A stream rechannelization project was proposed in 1985 for the upper reaches of marsh creek. The project was to rechannelize the creek to prevent the flooding of the adjacent bottomland farms and fields. In the past these fields supported agricultural crops and grazing. Upstream strip-mining activities caused the creek to become filled with silt.

The project area was limited to the area upstream of the Ky Highway 92 crossing to the headwater forks. Work would continue up the tributaries, ie, Osborne, Hayes and Trammel Creeks.

This project was not approved for funding by the USDI, OSM due to "a lack of pre-coal mining impacts and potential harm to Endangered and Threatened fish, plants and wildlife species". The latter reason for denial was based on comments received from the U.S. Fish and Wildlife Service, Kentucky Nature Preserves Commission and the Kentucky Dept. of Fish and Wildlife Resources.

The local Soil Conservation Service office was instrumental in developing this project and is still interested in restoring the farmlands along Marsh Creek.

### Rockcastle River - Parker Branch Reservoir Project

The Parker Branch Reservoir was proposed to provide power generation and recreation. The dam for the Proposed Parker Branch Reservoir would be located in Rockcastle and Jackson Counties of Kentucky. The site would be upstream from the confluence of Parker Branch with the Rockcastle River.

The dam would be of rockfill construction with an impervious core. The height would be 161 feet above the streambed, with a length of about 900 feet. The proposed reservoir would impound about 8700 acres with a storage capacity of 317,200 acre feet of water at full capacity with a draw down to 5,100 acres and 153,300 acre feet of water.



At this time the proponents, Parkers Branch Industrial Authority, are still interested in pursuing this project.

### Station Camp Creek

The Upper Station Camp Creek Reservoir proposal was initiated by the U.S. Corps of Engineers as an alternative to the Red River Reservoir which met with public opposition. The reservoir was intended to provide an alternate water source for Central Kentucky, flood control, and as a source of recreation in Jackson County.

Two dam sites were proposed. One dam would be located 22 miles above the mouth of Station Camp Creek, The dam would be 120 feet high and pool 850 acres, innundating both South Fork and War Fork. An alternative dam site was proposed above the War Fork tributary, its purpose was to protect the environmentally sensitive ecology. The dam would be 250 feet high and would provide a reservoir of 4712 acres.

A recommendation by the Kentucky Division of Water was that the construction of a dam at either of the two sites studied would have a negative impacts on the resources. However, the "sponserers" of this proposal, Jackson County Fiscal Court, City of McKee, and the Jackson County Development Association, are still interested in persuing this project.

### Cumberland River Impoundment

A proposal by the U.S. Army Corp of Engineers for an 80 foot high dam on the Cumberland River a mile upstream from Cumberland Falls. This dam would create a narrow impoundment backing up water as far as 35 miles in the non-flood condition. The impoundment would have a surface area of 2,870 acres.

The purpose of the dam was to provide hydroelectric power, offer flood control and reliable water supplies of water for the cities of Williamsburg, Kentucky, and Jellico, Tennessee. The impoundment would also regulate water flow over the Cumberland Falls, ensuring a minimum flow of 10 times as much water as at dry times at all times and become a major tourist attraction.

The project was first proposed over thirty years ago and mothballed due to "...a lot of environmental opposition..." However, a consortium of local, State and Federal officials, and regional developers met March 17, 1993 in Williamsburg to discuss the feasibility of resurrecting the project.

### Landownership and Land Use

Private land use in the study corridors consists of residences, recreational cabins, small woodlots, farming, grazing, use of private land for recreational access to the rivers, and some minerals, oil, and gas development.

TABLE 2-3. LANDOWNERSHIP IN STUDY RIVER CORRIDORS					
RIVER	FEDERAL OWNERSHIP	PRIVATE OWNERSHIP	STATE OWNERSHIP	TOTAL ACRES	PERCENT IN STATE/FED. OWNERSHIP
Cumberland	3,744	1,139	614	5,497	79
Rockcastle	3,506	846	0	4,352	81
Marsh Creek	2,633	827	0	3,460	76
Rock Creek	4,038	726	0	4,766	85

### Visual Resource

The scenic quality of the visual resource in the study corridors is determined by classifying the landscape into different degrees of variety, or variety classes, using the U.S. Forest Service system detailed in National Forest Landscape Management Handbook, Volume 1, Agriculture Handbook No. 434. This determines the landscapes that are most and least important value from the standpoint of scenic quality. Classification of scenic quality is based on the premise that all landscapes have some value, but those with the most variety in terms of landform, rock form, vegetation, and water form have the greatest potential for scenic value.

There are three variety classes that can describe the scenic quality of the natural or near-natural landscape: (1) Variety Class A-Distinctive, (2) Variety Class B-Common, and (3) Variety Class C-Minimal. Most of the river corridors in the study area fall into Variety Classes A and B.

Variety Class A river corridors are characterized by land forms that have slopes over 60%, have highly-dissected and irregular ridgelines and have deep, narrow valleys with a variety of topographic features. Rock forms, such as rock outcrops, arches, or rock shelters, are distinctive in size, shape, or location. Highly scenic areas have a mixed deciduous-coniferous tree cover with a wide variety of shrub and herbaceous species, creating a high degree of patterns in vegetation. Large, old trees may be present. Streams are clear and exhibit distinctive characteristics, such as waterfalls, rapids, deep pools, and meanders.

Variety Class B river corridors are characterized by moderately varied and slightly dissected terrain with slopes 30% to 60%. Geologic features are evident, but do not dominate other objects in the area seen. There is moderate diversity in trees, shrubs, and herbs. Rivers and streams have common meandering and flow characteristics.

Scenic quality was evaluated within the 1/2-mile-wide study corridors and was based on physical features present in the corridors. The area observed from the water, in many cases, may be less than 1/8-mile on one or both sides of the river due to the steepness of the slope.

Approximately 35 miles (57%) of the total 61 miles of study rivers are in corridors rated Variety Class A because of distinctive land form, rock form, vegetative pattern, or water form. Most of the remaining 26 miles of river corridor are in Variety Class B. There is some private land within the corridors that has very little variety, and falls in Variety Class C.

The most scenic Variety Class A corridors are those with sheer, gorge-like canyons with large rock faces or outcrops, and large boulders creating raging rapids of clear water. Vegetation is lush and widely varied, from large trees to the herbaceous ground cover on the forest floor. Past timber harvest may be present but is not a dominant feature in the landscape. Fields or pastures with farm buildings are present on private lands. Utility lines may be evident in the forested landscape.

The Variety Class B corridors are those with some degree of enclosure to very limited enclosure. Geologic features may be present, but are not dominant in the landscape. Vegetation is common to the area, such as a variety of hardwoods with some interspersed pines. Water in the rivers or creeks may be discolored due to silt. Timber harvest may be prominent in the landscape. Pasture, row crops, farm buildings, roads, and utility lines may be present.

Current Daniel Boone National Forest management policy within the river corridors does not allow for timber management activities, except salvage of wind-damaged trees or other management practices that may affect the integrity of the corridors. The corridors are essentially managed as Wild until this study is completed and a determination has been made that the river classifies as something other than Wild.

#### Wilderness/Special Interest Areas

##### Cumberland Falls State Park

The Cumberland River flows through the 1,657-acre Cumberland Falls State Park. The State Park is best known for its 69-foot-high by 125-foot-wide Cumberland Falls and its Moonbow. An estimated 2 million visitors came to this park in 1991 to view the falls, participate in rafting trips below the falls, camp, fish, hike, and horseback ride within the park.

##### Big South Fork National River and Recreation Area

The eligible segment of Rock Creek is adjacent to the 106,000-acre Big South Fork National River and Recreation Area. The Big South Fork Area is managed by the National Park Service, and early in its development was referred to as "the Yellowstone of the East." In 1991 210,340 visitors were recorded in the BSNRRA on the Kentucky side. In addition to the trails and scenic opportunities in the BSFNRRA adjacent to Rock Creek, there is the Blue Heron Mining Complex. The Blue Heron Mining Complex is a historic interpretation of a company-owned coal town managed by the National Park Service. 117,000 visitors were recorded in 1991.

##### State Wild River Designation on Rivers Being Studied

Three out of four river segments being studied-- Cumberland, Rock Creek, and Rockcastle-- are within river corridors designated by the Commonwealth of Kentucky as Wild Rivers. This designation was made:

for the purpose ...to preserve some streams or portions thereof in their free-flowing condition because their natural, scenic, scientific, and aesthetic values outweigh their value for water development and control purposes now and in the future. (See Appendix F.)



## Cultural and Historical Resources

A systematic inventory of the cultural resources has been completed on one of the four study rivers. The most comprehensive cultural resource inventory of the study corridors was prepared by the Earth Systems Division of Soil Systems, Inc. for the Rockcastle River corridor. The study identified 92 sites containing cultural remains (objects made or modified by human behavior), including 65 rock shelter sites. The report recommended the entire study area be considered potentially eligible for nomination as a historical district to the National Register of Historic Places. The report concluded that with more recreation seekers turning to the forest and river for enjoyment, there is a high potential for long-term adverse impacts to the cultural resources.

Interest in the prehistoric remains that occur along Upper Cumberland River and its major tributaries began shortly after the area was settled by Europeans. C. S. Rafinesque was the first to record archaeological sites in the Upper Cumberland drainage area when in 1824, he described a town on the Cumberland, above Williamsburg as having 20 houses and a teocalli (house built on top of a truncated mound). Unfortunately, no detailed locational description was provided.

Small, segmented surveys that have been conducted in or adjacent to the study corridors indicate that the cultural resources in these river corridors are quite similar in composition to those identified in the Rockcastle River study area.

As described above specific information on cultural resources within the study corridors is spotty. Below is a general overview of the pre-historic and historic periods of the area:

### Paleoindian Period (pre 8000 B.C.)

The arrival of humans in the area probably was influenced by the movements of the Pleistocene glaciers. Although the glaciers did not penetrate into the area, a cooler, moister climate which resulted from the glaciers affected the composition and distribution of floral communities and faunal species. This resulted in significantly different flora and fauna than are present today (Delcourt and Delcourt 1982).

The traditional picture of Paleoindian life portrays a highly mobile existence dependent almost entirely on hunting big game, including now-extinct Pleistocene fauna including mastodons. However, plant foods were also important in the Paleoindian diet. Paleoindian groups display strong preferences for high quality cherts in manufacturing their tools, and implements fashioned from distinctive chert types are found widely distributed from their source areas. The relative scarcity of sites dating to this cultural period may be due to a low population density, combined with difficulties in locating the remains of highly mobile, low density populations characterized by a small group size.



## Archaic Period (8000 - 1000 B.C.)

The Archaic period encompasses a long time span during which important cultural changes took place (Jefferies 1990). Material culture underwent gradual diversification, with increasing regionalization of artifact assemblages. The artifact assemblages become more varied as groups tailored their subsistence strategies to more effectively exploit locally available resources. In response to environmental changes and the associated changes in plant and animal life, Archaic peoples developed a more diversified subsistence strategy based on choices from a variety of local subsistence options. These options included hunting, plant food gathering, fishing, and near the end of the cultural period, the beginnings of plant domestication.

Archaic materials have been recovered from four of the five rockshelter sites excavated tested by the Forest Service in McCreary County (Boedy and Sharp 1992). Additionally, a relationship between upland sites and rockshelter sites containing Archaic materials is beginning to emerge. Archaeological sites containing Archaic materials will probably be similar in number and composition to those identified in adjacent surveyed areas when more work is conducted within the study area boundaries.

## Woodland Period (1000 B.C. - A.D. 900)

The Woodland period of Eastern Kentucky witnessed a continuation and elaboration of the cultural processes that began during the Archaic period (Railey 1990). Throughout much of the period, subsistence practices remained similar to those of the Archaic, combining hunting, plant food gathering, and fishing in a seasonal round. Archaeological investigations document a steadily increasing use of cultivated plant resources during this cultural period. Ceramic vessels and projectile points whose small size infer that the bow and arrow was being utilized appear for the first time in the archaeological record during this period. Concomitant with the increased use of agriculture is evidence of sedentism during this period.

Differences in the treatment of the dead including elaborate mortuary rituals and cremations imply that the once egalitarian hunting and gathering societies were developing greater social differences. Raw material from non-local sources recovered from burial contexts attest to the operation of inter-regional exchange networks. Unfortunately the Woodland period is poorly understood. Only one site containing Woodland deposits has been identified in the limited investigations conducted.

In other areas of Eastern Kentucky petroglyph sites have been recorded which may date to this cultural period.

## Late Prehistoric Period (A.D. 900 - 1750)

This period witnessed the increased importance of horticulture as a means of subsistence and an increase in socio-political complexity. In contrast to the Clifty Wilderness Area where the Fort Ancient is the cultural expression identified, the area surrounding the Beaver Creek Wilderness was occupied by Mississippian peoples during this time frame. The Mississippian Culture represents the highest level of social and political organization and complexity in eastern North American pre-history.

According to traditional theory, Kentucky had lost most of its native population by the time Europeans began exploration of the area. Kentucky has long been referred to as the "Dark and Bloody Ground"; an area devoid of large settlements of aboriginal groups occupying adjacent states. The validity of this suggestion is in part due to the native groups being driven from their homes in response to Iroquois pressure. During the middle of the Protohistoric Period (A.D. 1540-1730) the Iroquois Confederacy became an active participant in the lucrative fur trade with the French and Dutch. In order to expand their hunting territories and gain a monopoly in the fur trade, the Iroquois began to raid the Ohio Valley.

#### Historic Period (1750 - present)

The first documented exploration of the area was carried out by Dr. Thomas Walker of Virginia in 1750. Walker crossed the Cumberland Gap and followed the Cumberland River westward. Shortly afterward the "Long Hunters" entered the region in 1769-1770 to hunt and trap the abundant deer, bear, elk and beaver. The area in the Daniel Boone National Forest was supposedly left largely abandoned except for small hunting and war parties of Native Americans. Only four groups are known for certain to have lived in or utilized the area. These are the Shawnee, Mingo, Cherokee and Tutelo (Henderson et al. 1986). Settlement within the area was similar to that of other regions of Eastern Kentucky where a relatively sparse population dispersed along the stream valleys in small groups or individual households (Duda 1980). The need for saltpeter utilized in the manufacture of gunpowder during the nineteenth century, especially during the War of 1812 and the Civil War resulted in mining operations within numerous rockshelters of the area.

Coal mining was another important early industry. Coal mining operations may have occurred as early as 1860.

### Chapter 3. Findings of Eligibility and Classification

The Forest Service was the lead agency for studying six rivers, identified in the National Rivers Inventory (NRI), for possible inclusion in the Wild and Scenic Rivers System. During the period 1985 to 1991 these six rivers were studied for Eligibility and Classification in the System. The Forest Service used the Wild and Scenic Rivers Act and the Final Revised Interagency Guidelines for Eligibility, Classification, and Management of River Areas (47 Federal Register 39454, September 7, 1982) for direction in determining the Eligibility and Classification of the study rivers.

#### FINDINGS

##### Cumberland River

Eligibility and Classification determination was completed in 1988.

##### Eligibility.

Of the 29 miles studied, a 14.9-mile segment from Cane Creek to approximately 4 miles downstream from Kentucky Highway 90 bridge was found eligible, possessing outstandingly remarkable scenic, geological and recreational values.

**Scenic Values.** The Cumberland Falls is the most striking scenic feature on the river. Sixty-nine feet high and 125 feet wide, the falls produce one of only two moonbows known to occur in the world. Two smaller waterfalls are located in downstream tributaries. Several boulder fields occur below the falls, presenting a striking section of rapids. The segment above the falls represents a vestige of the type of large Eastern rivers as seen by early explorers of the region.

**Geological Values.** The slowly migrating falls, and consequent boulder-strewn river, represent an important opportunity for interpreting and explaining the geomorphology of the area.

**Recreational Values.** The Cumberland River is unique in the Forest and the area for having sufficient flow to support whitewater boating in the lower section nearly year-around. Above the falls, the Cumberland is a vestige of the large, powerful Eastern rivers that provide a means of travel through an area that has few signs of development. The falls and boulder fields downstream present paddlers and hikers outstandingly remarkable sightseeing opportunities. The Class II and III whitewater developed by the boulder fields provide challenging recreation for rafters, kayakers, and expert canoeists.

##### Classification

The study determined that the Cumberland River segment qualified for a classification of Scenic. The Scenic classification is based on these considerations:

- The segment is free of impoundments.



- The segment is accessible by passenger cars at Cumberland Falls State Park, where State Highway 90 bridges the river, and by OHVs in other sections.
- There are structures and improvements at Cumberland Falls State Park.
- The shoreline and the area that can be seen from the river are largely primitive, except for the development associated with the Park and private land. The river corridor presents an overall impression of naturalness with little evidence of human activity.

## Marsh Creek

Eligibility and Classification determination was completed in 1989.

### Eligibility

Of the 18 miles studied, 15 miles from the confluence of the Cumberland River to river mile 15 were found eligible, possessing outstandingly remarkable recreational and wildlife values.

**Recreational Values.** This segment provides an exceptional opportunity for canoeists. There are a number of Class II and Class III rapids with very few quiet stretches. The experience is further enhanced by the few points of access to the area by vehicles and lack of other signs of human intervention along the shores. In addition, the lower 4.1 miles contains distinguishing characteristics of land forms, rock forms, and vegetation that combine to produce a landscape that is distinctive.

**Fish and Wildlife Values.** The entire segment from State Highway 1044 bridge to the confluence of the Cumberland River contains the largest and most stable of the four or five known populations of the Cumberland Elktote mussel, Alasmodonta atropurpurea. This mussel is listed as Endangered by the Kentucky Academy of Science and as a Category 2 Status Review species by the U.S. Fish and Wildlife Service. Furthermore, Marsh Creek is the only known tributary above Cumberland Falls to have retained a diverse mussel fauna. Six of the nine species known to have occurred in the upper Cumberland River drainage still exist in Marsh Creek.

### Classification.

The study determined that the first seven miles of the Marsh Creek Study Area qualified for a classification of Scenic and the next eight miles qualified as Recreational.

The Scenic classification on the first 7 miles is based on these considerations:

- Human activity along this segment is evident in the bridge at the upper boundary, and some logging activities, which occurred during the period from 1978 to 1985, are evident on ridges overlooking the creek, and are viewable from the creek.



- The segment is free of impoundments.
- There is limited access by OHVs and trails into the corridor; 2-wheel-drive vehicles have access at the Rattler Ford Bridge.
- The shoreline and landscape predominantly, viewed from Marsh Creek, are primitive.

The Recreational classification on the next 8 miles is based on these considerations:

- The segment is free of impoundments.
- Three bridges cross this segment.
- Evidence of man's activity on this portion has increased in the past 3-15 years.
- Approximately 15% of the corridor on National Forest Land has been logged, the majority logged around 1978.
- There is increasing access to the creek by OHV and 2-wheel-drive vehicles. At one point, a county road parallels Marsh Creek for approximately 1/2 mile.

## Rock Creek

Eligibility and Classification study was completed in 1991.

### Eligibility

Of the 21 miles studied, a 17.5-mile segment from White Oak Junction to the Kentucky/Tennessee border was found to be eligible possessing outstandingly remarkable recreational, wildlife, and water quality values.

**Recreational Values.** This segment is heavily used for swimming, camping, picnicking, and horseback riding. In addition, this segment is heavily used for its regionally-important rainbow trout fishery, which is sustained by monthly stockings.

**Fish and Wildlife Values.** There is recorded evidence of the existence of Cumberland Elktoe Mussel (Alasmodonta atropurpurea), listed as Federal C2 and State endangered. There are documented occurrences of and suitable habitat for Palezone shiner (Notropis sp.3), a Federal C2 and State endangered species) and Sawfin shiner (Notropis sp.4), listed as state endangered). There are occurrences of two terrestrial species, the Eastern Woodrat and Rafinesque Big-eared bat, that are both Federal C2 species.

**Water Quality Values.** Water quality is excellent. The segment is one of only a few streams of this significance in the region.

## Classification

The study determined that the Rock Creek segment qualified for a classification of Recreational. The recreational classification is based on these considerations:

- Evidence of human activity is apparent and continuous throughout the segment.
- A public road parallels the stream for its entire length, and there are three bridges, numerous dwellings and farms, and Forest Service campgrounds and picnic areas.

## **Rockcastle River**

Eligibility and Classification determination was completed in 1985.

### Eligibility.

Of the 52.5 miles studied, a 13.3-mile segment below Kentucky Highway 80 to the lower end of Rockcastle Narrows was found eligible possessing outstandingly remarkable scenic values.

**Scenic Values.** The river runs through land forms and vegetation of high scenic value. The entire corridor is in a mixed deciduous-coniferous tree cover with a wide diversity of subvegetation, present and ranging from very lush to very sparse or nonexistent. The river valley is very narrow, its upper slopes reaching 95 degrees and the high ridgetops dissected by tributaries that appear to be structurally controlled by major rock patterns. The segment is accessible in limited areas by trails and roads, and there are signs of minor habitation in this segment.

### Classification.

The study determined that the river segment qualified for a classification of Scenic. This classification is based on these considerations:

- The segment is free of impoundments.
- The water quality is adequate, and the volume is sufficient.
- The shoreline and immediate area are essentially semi-primitive, and recreation in the form of sightseeing, fishing, canoeing, and floating dominate the use of the river.
- There are signs of minor habitation, primarily in the form of dispersed recreation but including some very low-scale developments, in areas of this segment.
- The segment is accessible in limited areas by trails and roads.

## War Fork and South Fork of Station Camp Creek

Eligibility and Classification study was completed in 1991.

### Eligibility

Since the two forks of Station Camp Creek, War Fork and South Fork, are in the same watershed, these were studied together. The study area was divided into four segments, two on each stream.

In segments 1 and 3, of the South Fork of Station Camp Creek, the features were not found outstandingly remarkable. In segments 2 and 4, of the War Fork of Station Camp Creek, the features were not found to be outstandingly remarkable. Segment 4 contains caves, clifflines, clusters of bat hibernacula, vegetation, and a diverse aquatic community that is significant. However, the segment as a whole was not found to be regionally or nationally outstandingly remarkable.

The river system does have special qualities that should be considered in future management. Neither the river system as a whole nor any segment was considered eligible for designation as a National Wild and Scenic River.

### Classification

No outstandingly remarkable values were found at the time of the study, therefore, these river segments are not eligible for classification as Wild, Scenic, or Recreational.





## CHAPTER 4. Alternatives Including the Proposed Action

This study has developed and analyzed five alternatives regarding the suitability or unsuitability of including four rivers in the National Wild and Scenic Rivers System. Selecting Alternative 1 (no action) would mean that all the rivers would be found unsuitable for designation, and management would be in accordance with the Forest Land and Resource Management Plan. Alternative 2 would recommend designation of all four of the eligible river segments. The other three alternatives would recommend designation of various combinations of the rivers.

Table 4-1, page 4-4, shows which rivers were evaluated under each alternative, and Table 4-3, on page 4-6, summarizes the consequences of each alternative based on the analysis presented in Chapter 5.

Factors that were considered in determining the suitability of all the alternatives include the following:

- One or more outstandingly remarkable characteristic that make the river a worthy addition to the National Wild and Scenic Rivers system.
- The amount of private land along the river and the present uses of the land.
- Present and possible future uses of the river and its corridor, and how these uses would be affected. These uses include recreation, timber, minerals, municipal water sources, and fish and wildlife.
- Public, state, and local interest in designation of the river.
- Estimated cost of acquiring the necessary lands and interests in land and of administering the area if it is added to the system.
- Additional issues and concerns identified by the public. These include concerns about condemnation or restrictions placed on private land, user conflicts, impacts on water quality by activities outside of the corridors, and coordination with the Commonwealth of Kentucky on State Wild River boundaries and Wild and Scenic Rivers corridors.

### Alternatives Considered

(See Table 4-2, on page 4-4, for a display of alternative development from significant issues.)

All of the following alternatives are consistent with the Forest Land and Resource Management Plan. Mitigation measures detailed in Appendix K for PETS species in study corridors apply to Alternatives 2 through 5.

#### Alternative 1. Recommend none of the river segments for designation.

Alternative 1 would not recommend any rivers for designation (no action). This would result from all rivers being found unsuitable, with the river

values being protected and maintained under management standards and guidelines of the Daniel Boone National Forest Land and Resources Management Plan (LRMP).

This alternative would allow future project-specific studies for possible water impoundments on those rivers. Marsh Creek would not have the protection afforded the other study rivers under State Wild River designation. This alternative does not meet the intent of the Wild and Scenic Rivers Act, nor does it respond to public concerns.

Alternative 2. Recommend all eligible river segments for designation.

Alternative 2 would find all four eligible river segments suitable for designation into the National Wild and Scenic Rivers System, and would protect all of the river segments from impoundment and preserve their outstandingly remarkable values. Private landowners could continue current land uses and would be encouraged to use the standards displayed in Appendix F as a guide for future land uses and developments. Protective measures under the National Wild and Scenic Rivers designation would supplement the management guidelines of Kentucky Wild River designation on the Cumberland River, Rock Creek, and Rockcastle River.

Alternative 3. Recommend the eligible river segments where land use activities in their watersheds, now and in the foreseeable future will not have significant impacts on Outstandingly Remarkable Values, for designation.

Alternative 3 would find Rock Creek suitable for designation into the National Wild and Scenic Rivers System, and would protect its outstandingly remarkable values. This alternative does not include rivers where water quality may be significantly affected by minerals, oil and gas, exploration and development, grazing, and farming now and in the foreseeable future. Rivers that may be impacted by activities now and in the foreseeable future are the Cumberland River, Marsh Creek, and the Rockcastle River. Protection of the outstandingly remarkable values of Marsh Creek would be provided by the Standards and Guidelines contained in the Daniel Boone LRMP. Protection of river values for the Cumberland River and the Rockcastle River would be provided by Kentucky Wild Rivers regulations (See Appendix H).

Alternative 4. Recommend only the eligible rivers that are not already protected by the State Wild Rivers designation, for designation.

Alternative 4 would find Marsh Creek suitable for designation into the National Wild and Scenic Rivers System, and would protect its outstandingly remarkable values. This alternative does not include the eligible segments of the Cumberland River, Rock Creek, and the Rockcastle River, which have Kentucky Wild Rivers designation. Present management guidelines for Kentucky Wild Rivers are similar to management guidelines for rivers classified as Scenic or Recreational in the National Wild and Scenic Rivers System. Through a Memorandum of Understanding with the Kentucky Natural Resources and Environmental Protection Cabinet, the U.S. Forest Service shall make every effort to manage National Forest lands within the intent of the Kentucky Wild Rivers Act as amended.

Alternative 5. (Preferred alternative) Recommend only the eligible river segments that have Outstandingly Remarkable Values representing the Physiographic Region, and which respond to public issues, for designation.

Alternative 5 would find all eligible river segments studied as suitable, except a 1.9 mile segment of Marsh Creek south of the State Road 478 bridge, for designation into the National Wild and Scenic Rivers System and thus protect those river segments from future impoundment and protect the outstandingly remarkable values. The 1.9 mile segment of Marsh Creek south of the State Road 478 bridge is unsuitable for management as a National Wild and Scenic River due to the predominance of private land in that segment. The 1.9 mile segment is 80 percent private ownership.

#### Present Management

Management of the study corridors is based on Standards and Guidelines of the Daniel Boone National Forest LRMP for rivers and riparian areas. Until a decision is made by congress on whether to designate or not designate the study rivers, each individual river segment and its adjacent environments consisting of an area 1/4 mile in distance on each side, will be managed using the same range of management techniques that have caused these rivers to be considered as possible candidates to the National Wild and Scenic Rivers System.

Management will include the necessary measures to ensure that the free-flowing nature of the river, and its natural elements which cause it to be eligible, are not diminished.

In a letter dated May 25, 1989 the Forest Supervisor stated a policy of managing the study areas as though they had a wild classification until a determination has been made that the river classifies as something other than wild and is documented.

#### Future Management

It is anticipated that these rivers will be seperated out as one, or more, new management areas in the revision of the Daniel Boone FLRMP, scheduled to start in 1994. Standards and Guidelines will be developed that will protect and preserve the values that made them eligible as members of the National Wild and Scenic Rivers System. If they have not been designated by the time the revised FLRMP has been finalized, these standards and guidelines will include the necessary measures to ensure that the values that made them potential candidates as members of the National Wild and Scenic Rivers System are not diminished.

#### Rivers Eliminated From the Detailed Study

South Fork, Station Camp Creek. In the Eligibility and Classification study the study team determined that neither the river system as a whole nor any segment was considered eligible for designation as a National Wild and Scenic River. Therefore, this river was not studied in detail.



War Fork, Station Camp Creek.

Same as South Fork, Station Camp Creek.

Little South Fork of the Cumberland, and South Fork of the Kentucky.

There is not enough National Forest System land within their river corridors for the Forest Service to adequately manage them as National Wild and Scenic Rivers. The Forest Service has requested that the Division of Water, of the Commonwealth of Kentucky be the lead agency to conduct the Eligibility, Classification and Suitability studies.

#### Corridor Boundaries

Generally, boundaries for National Wild and Scenic Rivers are finalized after they have been included in the system.

Recommendations from the Rock Creek Eligibility and Classification study team were to delineate the corridor widths based on the "seen area" from the creek, or not more than 1/4 mile from the river banks (the study corridor). These boundaries are also recommended for the Cumberland River and the Rockcastle River, but are not identified in their Eligibility and Classification Studies.

In this situation 3 of the 4 study rivers are already included in the Kentucky Wild River System. The boundaries established by the Commonwealth of Kentucky will fulfill the needs of the National Wild and Scenic system. Therefore, where corridors are coincident to the National Wild and Scenic Rivers boundaries are recommended to be the same as the Kentucky Wild River Boundaries.

It is recommended that the final boundaries of the Marsh Creek segment be established after it is included in the system. Recommendations of the Marsh Creek Eligibility and Classification Study indicate the boundary of the corridor should be the area seen from the creek, not to exceed 1/4 mile.

The upstream and downstream endpoints of the segments found eligible in the Eligibility and Classification studies are recommended to be the upstream and downstream terminuses. In the cases of the Cumberland River and Rockcastle River, the eligible segments and Kentucky Wild River endpoints are not the same. However, eligible segments are located within the Kentucky Wild River boundaries.



Summary of rivers that would be recommended as suitable by alternative:

Table 4-1 RIVERS RECOMMENDED AS SUITABLE BY ALTERNATIVE						
River Name	River Miles	Alternative				
		No Action 1	2	3	4	5
Rockcastle	13.3		X			X
Cumberland	14.9		X			X
Marsh Creek	15.0		X		X	X*
Rock Creek	17.5		X	X		X
Total River Miles	60.7	0	60.7	17.5	15.0	59.7
* Segment III of Marsh Creek is 80% private. Exclude the 1.9 mile segment south of the County Road 478 bridge.						

**TABLE 4-2**  
**Alternative Development from Significant Issues**

<b>ISSUES</b>	<b>Alternative 1</b>  <b>Recommend none of the eligible river segments for designation.</b>	<b>Alternative 2</b>  <b>Recommend all eligible river segments for designation.</b>
Affects Private Land and Landowners Ability to Use Their Land.	Non-designation would avoid perceived concern that designation would impose restrictions on private landowners. Management of river corridors would follow guidelines currently in effect with no constraints on private land.	Uses on private land at the time of the study would continue. Designation would emphasize willing seller acquisition. Not responsive to concerns over potential for restrictions in Marsh Creek.
Cumulative Impacts on Water Quality by Activities on Private Lands Outside Corridor Boundaries.	No anticipated change through non-designation.	Designation would provide authority to regulate uses in watersheds through scenic easements or willing seller acquisition for the protection of water quality.
Effects on Threatened and Endangered Species.	Protective measures required by FLRMP and Endangered Species Act would be in effect.	Designation would remove potential for water control structures that would inundate and change T&E habitat.
Increased Use on Limited Access Facilities.	Present facilities and management plans would be adequate to handle present and anticipated levels of use.	Designation would include monitoring of use levels and their relationship to the carrying capacity of access facilities.
Designation Would Involve Cooperation With State and Federal Agencies Over Boundaries and Management.	Present Memorandums of Understanding (MOU's) would provide adequate levels of cooperation between State and Federal agencies.	Designation would provide incentives for protection of Marsh Creek and would support protective measures of other eligible segments. This would provide incentives for possible partnerships between agencies and private landowners.
Designation Would Restrict Public Use and Federal Management.	Management of river corridors would follow management guidelines currently in effect.	Some restrictions on present uses of Federal lands may be required to protect the river values.

TABLE 4-2 (Continued)  
Alternative Development from Significant Issues

<p style="text-align: center;"><b>Alternative 3</b></p> <p style="text-align: center;"><b>Recommend eligible river segments where land use activities in the watersheds will not have significant impacts on river values.</b></p>	<p style="text-align: center;"><b>Alternative 4</b></p> <p style="text-align: center;"><b>Recommend eligible river segments not protected by State Wild River designation.</b></p>	<p style="text-align: center;"><b>Alternative 5</b></p> <p style="text-align: center;"><b>Recommend the eligible river segments that have Outstandingly Remarkable Values representing the Physiographic Region and which respond to public issues.</b></p>
Same as alternative 2, for Rock Creek.	Same as Alternative 2 for Marsh Creek.	Uses on private land at the time of the study would continue. Designation would emphasize willing seller acquisition. Responsive to public concerns over potential for restrictions in Marsh Creek Corridor.
Federal ownership of most of the watershed of the eligible segment of Rock Creek provide the least anticipated cumulative impacts. Mining, farms, and pastureland on other eligible segments create a potential for cumulative impacts.	Not protected by Kentucky Wild River designation. Large percentage of private land in the marsh Creek headwaters and the southern 1.9 mile segment may lead to significant cumulative impacts.	Designation would provide authority to regulate use in watersheds of eligible segments through scenic easements and willing seller acquisition to protect water quality.
Same as Alternative 2 for Rock Creek.	Not protected by Kentucky Wild River designation. Same as Alternative 2 for Marsh Creek.	Designation would remove potential for water control structures that would inundate and change T&E habitat.
Same as alternative 2 for Rock Creek.	Same as Alternative 2 for Marsh Creek.	Designation would include monitoring of use levels and their relationship to carrying capacity of access facilities.
Same as Alternative 2 for Rock Creek.	This eligible river segment is not a designated Kentucky Wild River. Additional cooperation would be needed on the segment of Marsh Creek in the Cumberland Wild River corridor.	Designation would provide incentive for state and private river protection measures for Marsh Creek and would support state protection measures on the other eligible river segments. This alternative would provide incentives for protective partnership programs.
Same as Alternative 2 for Rock Creek.	Same as Alternative 2 for Marsh Creek.	Some restrictions on present uses of Federal lands may be required to protect the river values.

**Table 4-3. Summary of Environmental Consequences**

<b>Factors Considered</b>	<b>(No Action) Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>
Water Quantity and Quality	Non-designation of the study rivers allow the consideration of proposals for impoundments on a site specific basis	Net improvement in water quality due to added emphasis on water quality. All designated river segments remain free-flowing.	Same as Alternative 1 for non-designated rivers. Same as Alternative 2 for Rock creek.
Private Lands	No effect.	Fee interest in lands would be acquired from willing sellers in the corridors. Encourage all landowners in corridors to manage lands for preservation of outstanding values. Scenic easements could be acquired.	Same as Alternative 2 for Rock Creek. No effect for non-designated rivers.
Social	No change to current lifestyles. Not responsive to public concern for preservation of free-flowing rivers and their outstandingly remarkable values.	Responsive to public desire to preserve free-flowing river values. Not responsive to non-suitability determination of southern 1.9 mile segment of Marsh Creek.	Minor effects on local economics in the Rock Creek area. Same as Alternative 1 for non-designated rivers.
Fisheries	Impoundments could adversely affect stream fisheries while benefiting lake fisheries.	Changes in the free-flowing nature of rivers would not be permitted.	Same as Alternative 2 for Rock Creek; Marsh Creek would not have benefit of State or Federal designation.
Proposed, Endangered, Threatened and Sensitive Species	Protection would remain at present levels, would allow the study of water resource projects that would change river characteristics.	Would prevent impoundments and increase monitoring for adverse user impacts.	Same as Alternative 2 for Rock Creek. Mitigation measures will be used to prevent impacts from concentrated recreation use.
Visual Resources	No effect.	No significant change. Protection of visual resources would be a concern for management activities on National Forest Lands.	Same as Alternative 1 for non-designated rivers. Same as Alternative 2 for Rock Creek.
Cultural Resources	Allows study of water resource projects that would impact cultural resources.	Mitigate indirect adverse impacts from increased recreational use.	Same as Alternative 1 for non-designated rivers. Same as Alternative 2 for Rock Creek.
Recreation	Possible impoundments could change free-flowing recreation to lake recreation activities.	River-oriented recreation would be protected. Short-term increase in use.	Same as Alternative 1 for non-designated rivers. Increased recreational use from designation concentrated on Rock Creek.
Minerals	No effect.	No significant change. Designation includes authority to acquire scenic easements for surface occupancy.	Same as Alternative 1 for non-designated rivers. Same as Alternative 2 for Rock Creek.
Vegetation Resources	No effect.	No significant change. Secondary to amenity values.	Same as Alternative 1 for non-designated rivers. Same as Alternative 2 for Rock Creek.



**Table 4-3.(Cont) Summary of Environmental Consequences**

<b>Factors Considered</b>	<b>Alternative 4</b>	<b>(Preferred Alt.) Alternative 5</b>	
Water Quantity and Quality	Same as Alternative 1 for non-designated rivers. Same as Alternative 2 for Marsh Creek.	Net improvement in water quality due to added emphasis on water quality. All designated river segments remain free-flowing.	
Private Lands	Same as Alternative 1 except an increased emphasis on acquiring land on Marsh Creek that is mostly private to protect outstandingly remarkable values.	Lands would be acquired from willing sellers within the corridors. Encourage all landowners within corridors to manage lands for preservation of outstanding values.	
Social	No change to current life styles. However, not responsive to local concerns about effects on use of private land.	Responsive to public's desire to preserve free-flowing river values. Responsive to local concerns about southern segment of Marsh Creek.	
Fisheries	Same as Alternative 1 for non-designated rivers. Same as Alternative 2 for Marsh Creek.	No changes, except that possible changes in the free-flowing nature of rivers would not be allowed.	
Proposed, Endangered, Threatened, and Sensitive Species	Same as Alternative 1 for non-designated rivers. Same as Alternative 3 for Marsh Creek.	Prevents impoundments and increases monitoring to avoid adverse user impacts.	
Visual Resources	Same as Alternative 1 for non-designated rivers. Same as Alternative 2 for Marsh Creek.	No significant change. Protection of visual resources would be a concern for management activities on National Forest Lands.	
Cultural Resources	Same as Alternative 1 for non-designated rivers. Same as Alternative 2 for Marsh Creek.	Possible indirect adverse impacts from increased recreational use.	
Recreation	Same as Alternative 1 for non-designated rivers. Same as Alternative 3 for Marsh Creek.	River-oriented recreation would be protected. Short-term increase in use.	
Minerals	Same as Alternative 1 for non-designated rivers. Same as Alternative 2 for Marsh Creek.	No significant change. Designation would give authority to acquire scenic easements for surface occupancy.	
Vegetation	Same as Alternative 1 for non-designated rivers. Same as Alternative 2 for Marsh Creek.	No significant change. Secondary to amenity values.	



## CHAPTER 5. Environmental Consequences

This chapter provides the scientific and analytic basis for comparing the alternatives. These Environmental consequences would be the result of implementing the various alternatives. Tables 4-1, and 4-2, page 4-4, compare the consequences of implementing each alternative in terms of outputs and environmental changes.

It is important to point out that the environmental effects analyzed in this chapter relate to alternatives developed regarding the suitability of the Study rivers for inclusion in the National Wild and Scenic Rivers System. They do not relate to the approval or disapproval of specific projects within the study area. The Forest Service requires a site-specific analysis for each proposed project. Opportunities for public comment on specific projects will be provided during project-level environmental analyses.

For the following factors, analysis of the alternatives revealed no effects on the human environment that would represent a significant change from the present situation:

- Air Quality
- Structures
- Grazing
- Soil loss
- Utilities

Other factors that were analyzed and were determined to have an effect on the human environment are discussed in the remainder of this chapter. Rivers not found eligible or not recommended for designation would be managed and protected under the management requirements of the Daniel Boone National Forest LRMP. The effects of National Wild and Scenic River designation on private lands is addressed separately due to the widespread concern raised by local landowners.

### Effects on Private Lands

Federal condemnation authority and the perception that the Forest Service can regulate private land uses were identified as major concerns of private landowners at each of the public meetings and contacts made during the Eligibility and Classification Studies. Since there is a considerable amount of private land in some river corridors, it is important to discuss the impact on private land that designation would have.

The Forest Service does not have the authority to regulate uses of private property. Forest Service policies, practices, and procedures can only suggest appropriate uses on other than National Forest System Lands in the corridors.

United States Department of Interior and United States Department of Agriculture interagency management guidelines and the Wild and Scenic Rivers Act state that all existing uses and development at the time of the designation will be allowed to continue. The Forest Service has established a set of standards, Forest Service Handbook 1909.12, Section 8.2 (Appendix G of this document), to be used as a guide to determine activities that are compatible with Wild and Scenic River designation. Any



new activities which are within these standards are generally acceptable. The guiding determination is whether the activities or uses affect the outstanding values of the rivers.

The Wild and Scenic Rivers Act prohibits the Secretaries of Interior and Agriculture from acquiring fee title to private land by condemnation if more than 50% of the acreage in a river corridor is owned by federal or state government. However, condemnation is permitted for clearing title and acquiring scenic and other easements that are reasonably necessary to provide public access to a river or to protect the outstandingly remarkable values when they are threatened.

The Forest Service cannot condemn land for fee title under the authority of the National Wild and Scenic Rivers Act because more than 50% of the acreage within the corridors of the eligible segments are federally owned (Table 5-1). The Forest Service might, however, purchase land from willing sellers.

Table 5-1. NUMBER OF LAND OWNERS, ACREAGE, AND PERCENT OWNERSHIP					
River	No. of Pvt. Landowners	Private Acres	Percent Private	Federal and State Acres	Percent Federal /State
Cumberland	23	1,139	21%	4,358	79%
Marsh Creek	10	1,024	19%	3,740	73%*
Rock Creek	44	746	27%	4,778	86%
Rockcastle	23	846	14%	3,506	81%
* The segment of Marsh Creek south of the State Road 478 bridge is only 20% federally owned and could possibly qualify under Alternative 2 and 4 for condemnation of private land to protect the outstandingly remarkable values.					

Condemnation for scenic easements would only be considered when outstanding values are impacted or threatened. Private landowners would have the primary responsibility to manage their lands in a way that protects the outstandingly remarkable values of the river corridor. Private landowners would be encouraged to continue present land uses and to use the standards in Appendix G as a guide for future land uses and developments. Therefore, designation would maintain current land use trends and would maintain present lifestyles.

Designation would place no restrictions on the disposal of private land. Violations of water quality laws by private landowners are presently the responsibility of the Kentucky Department of Environmental Protection, Division of Water; this will remain unchanged.

Designation would not replace the authority of the state to regulate the use of private lands within the authorized boundaries of State-designated Wild Rivers. Designation would involve continued cooperation of both state and federal agencies as to management practices compatible with designation



as both a National Wild and Scenic River (See Appendix G) and as a State Wild River (See Appendix H).

Three of the eligible rivers -- the Cumberland River, Rock Creek, and the Rockcastle River, are also designated as Kentucky Wild Rivers. The Kentucky Wild Rivers Act, KRS Section 146.290, lists the activities that can take place within the State Wild Rivers corridors (See Appendix H). These permitted activities apply to state and private lands by law. Through a Memorandum of Understanding with the Kentucky Natural Resources and Environmental Protection Cabinet, the U.S. Forest Service shall make every effort to manage National Forest lands within the intent of the Kentucky Wild Rivers Act as amended (See Appendix J). Activities permitted on State and private lands under State Wild River laws and regulations are generally compatible with management guidelines of rivers classified as Scenic or Recreational under the National Wild and Scenic Rivers Act.

Designation could increase the value of private land and the economic opportunities of landowners. Designation would protect landowners from being displaced from their land by reservoir construction.

#### Effects on the Environment by Alternative

##### Alternative 1. Recommend none of the rivers for designation.

This alternative recommends that none of the study rivers are suitable for designation into the National Wild and Scenic Rivers System. These rivers would be managed and protected according to management requirements set forth in the Daniel Boone LRMP. Monitoring to insure compliance with CFR's and Forest Standards and Guidelines would be at a less intensive level than for any river designated.

#### Water Quality and Quantity

Non-designation of the study rivers allows the consideration of proposals for impoundments or water development projects on a site-specific basis. It is important to remember that this alternative does not imply that any impoundment would be approved. The decision to approve or disapprove an impoundment would be the subject of a future project-specific analysis. Water quality should stay at the same level, with the present federal and state management regulations.

#### Private Lands

Private lands located within the study corridors would not be affected, because there would be no change in present management.

#### Social

Current lifestyles would not be changed. This alternative would respond to public concerns for future municipal water supply impoundments. This alternative would not respond to public concerns for preservation of free-flowing rivers and the protection of the rivers' outstandingly remarkable values.

This alternative would not provide any incentive for State and private river protection measures for Marsh Creek and would not support State protective measures on Rock Creek and the Cumberland and Rockcastle Rivers. This alternative would not provide additional incentives for possible partnership projects between Federal, State, Local, and private landowners. There would be no change in Forest Allowable Sale Quantities (ASQ).

### Fisheries

Fisheries would remain at present levels and would continue to be managed on National Forest system lands under the Standards and Guidelines of the Daniel Boone LRMP. This alternative allows the possibility of future water resource projects which would change stream habitat characteristics.

### Proposed, Endangered, Threatened, and Sensitive (PETS) Species

Protection of PETS species would remain at present levels and continue to be managed under Daniel Boone LRMP standards and guidelines, and appropriate Threatened and Endangered Species protection laws. This alternative allows the possibility of future water resource projects that would change the river characteristics, which would alter the habitat of PETS species. However, any project would require project-specific studies and would be subject to compliance with the Endangered Species Act. Details of water resource projects proposed for these rivers are found in Chapter 2, Water Resource Projects.

### Visual Resources

Present visual quality would not be affected. The outstandingly remarkable scenic values on the Cumberland River and Rockcastle River would be maintained through the assigned Visual Quality Objectives managed under the standards and guidelines of the Daniel Boone LRMP.

### Cultural Resources

Cultural Resources in the river corridors would continue to be affected by present use. This alternative allows the possibility of future water resource projects that would change the river characteristics, which would impact Cultural Resource sites. However, any project would require project-specific studies and would be subject to compliance with the National Historical Preservation Act. Details of water resource projects proposed for these rivers are found in Chapter 2, Water Resource Projects.

### Recreation

Current recreation activities on National Forest lands and private lands would continue. Recreation management on National Forest lands would be subject to the standards and guidelines of the Daniel Boone LRMP. River use in Kentucky shows a gradual increase. Unregulated recreational use would cause overcrowding, which would lower the quality of the recreational experience. Free-flowing recreational opportunities would be maintained on the Cumberland River, Rock Creek, and the Rockcastle River under Kentucky Wild River designation. The outstandingly remarkable recreational values on Marsh Creek would not be protected by either state or federal programs.

## Minerals

Minerals, oil, and gas exploration and development would not be affected.

## Vegetation

Vegetation resources would not be affected. Timber resources would be managed under the standards and guidelines of the Daniel Boone LRMP. This alternative allows the possibility of future impoundments, leading to inundation, which would impact the vegetation and timber resources. Minor trampling of the grass, forbs and shrubs from recreationists accessing the corridors from private land would occur unregulated.

## Alternative 2. Recommend all eligible rivers for designation.

This alternative would find all eligible river segments as suitable for designation into the National Wild and Scenic Rivers System. Direction for management of designated rivers will be through the designating legislation, Daniel Boone National Forest LRMP and River Management Plans which would emphasize that the rivers and their watersheds will be managed as ecological units. Emphasis will be on preserving and protecting the relationships between the watersheds, the land, and the river or aquatic ecosystems.

## Water Quality and Quantity

This alternative would result in a net improvement in water quality due to the added emphasis on water quality in the management activities permitted in the watersheds of designated river segments. Visitor use may increase after designation, with the potential for increased stream sedimentation from user impacts. Monitoring of users and user impacts would provide data to guide management decisions to prevent or lessen adverse impacts.

Protection under the Wild and Scenic Rivers Act would prevent any future impoundments and would maintain water quality approximately at its current levels.

## Private Lands

This alternative would have no effect on the private lands located in the Cumberland River, Rockcastle River, and Rock Creek corridors since it would emphasize willing seller fee acquisition. The 1.9-mile segment south of the State Road 478 bridge is 80% privately owned, and there could be more emphasis placed on acquiring private lands in the Marsh Creek corridor.

Additional management controls would be needed to avoid potential impacts to private lands due to increased recreation use. Impoundments would not be allowed to change the natural river flow.

## Social

Public concerns for the preservation of free-flowing rivers, which led to the development of the Wild and Scenic Rivers Act, would be recognized. In general, there would be no significant effect upon the lifestyles of local residents. Uses of private land occurring at the time of this study would continue. Management guidelines for rivers with classifications of Scenic



or Recreational do not differ significantly from current management guidelines for timber management. The major difference would be additional restrictions placed upon timber management activities in the river corridors to protect and enhance river values. There is a potential reduction of 2.5% ASQ with the potential loss of up to 6.7 timber related jobs if this area is found unsuitable for timber management. Increases in tourism and associated recreational activities have the potential for creating 2.4 recreation related jobs, slightly improving the economy of local communities. River Management

Guides would be developed to preserve river values through standards and guidelines. Roads accessing the corridors would be evaluated on a case by case basis to determine if they are appropriate in the corridors. Some restrictions on present uses of Federal Lands may be required to protect the river values. There would be river management guides developed which would identify and manage for appropriate levels of use in the corridors. This would change present use in some cases.

This alternative would provide incentive for State and private river protection measures for Marsh Creek and would support State protective measures on Rock Creek and the Cumberland and Rockcastle Rivers. This alternative would provide incentive for possible partnership projects between Federal, State, Local, and private landowners.

This alternative would not respond to perceived fears by the local community of restrictions on the use of private land and condemnation after designation of the approximately 1.9-mile of Marsh Creek, south of the State Road 478 bridge, which is mostly private land.

#### **Fisheries**

Designation would prevent future impoundments and alterations that would change the stream fisheries to lake fisheries. Increased monitoring of designated rivers, provided for in River Management Guides, would provide data to guide management decisions in response to and prevention of adverse user impacts on fisheries.

#### **Proposed, Endangered, Threatened and Sensitive (PETS) Species**

Designation would prevent future impoundments that would change the free-flowing nature and habitat of the rivers. Designation will result in a potential for a slight increase in human visitation to designated segments. Any increase in visitation will carry with it the increased risk of (largely) inadvertent impacts to rare species on the part of the visitors. Especially vulnerable are those species which occur in fragile or uncommon habitats that are likely to be used by people engaged in river-based recreation activities. Species specific monitoring plans would be established and implemented for all federally listed species in River Corridors. In the event that recreational activities have reached a point where they may effect federally listed and Forest sensitive species on federal lands along any of the proposed river corridors, steps will immediately be taken to reduce or eliminate the cause of those effects. Those steps will be worked out promptly and cooperatively with representatives from the Forest Service and the USFWS. See appendix K for species specific monitoring plans for PETS species. Monitoring may identify opportunities for improvement of PETS species habitat.



## Visual Resources

Protection of scenic values through appropriate Visual Quality Objectives would be the management objective for all National Forest land in the river corridors. Visual Quality Objectives would be established appropriate to the classification established. Management activities would not be evident to the casual forest user, or would be evident but not a dominant feature in the landscape.

## Cultural Resources

Designation of all rivers would lead to potential indirect adverse impacts due to increased recreational use. Additional management controls would be needed to avoid the potential impacts of illegally digging in cultural resource sites. Increased monitoring of designated rivers would provide data to guide management decisions in response to and prevention of adverse impacts on cultural resources.

## Recreation

National designation would increase public awareness of the rivers, and result in the potential for increased use. National trends of recreation use on designated rivers shows a gradual increase in use which tapers off after a few years. This would be in addition to the trend of increasing use on Kentucky Rivers. This alternative would provide visitors a wide range of recreation opportunities available from four different free-flowing rivers. Users would still be able to access hunting, fishing, and camping spots in designated river corridors. Designation would provide the means and encouragement to determine the carrying capacity, and to develop appropriate measures to prevent overuse. Monitoring of use and impacts would allow the Forest Service to set up regulatory measures if the carrying capacity, established in the River Management Guide, were to be exceeded in the future. There will be an increased potential for man-caused fires.

## Minerals

Designation would give the Federal Government the authority under the National Wild and Scenic Rivers Act to acquire scenic easements. These scenic easements would allow the Forest Service to direct management of exploration and production sites in the corridors. There are Reserved and Outstanding mineral rights in the study corridors. However, there is little potential for development due to the economics of development in those corridors.

## Vegetation

Vegetation management in the designated corridors would be secondary to the protection or enhancement of river values. Special emphasis would be placed on outstanding values. There would be minor impacts to the understory (grass, forbs, and shrubs) due to trampling by recreation activities in the river corridors. The slight increase in recreation use projected after designation would be within manageable levels.

Alternative 3. Recommend the eligible rivers where land use activities in their watersheds, now and the foreseeable future will not have significant impacts on the Outstandingly Remarkable Values for designation.

This alternative would recommend only Rock Creek as suitable for designation in the National Wild and Scenic Rivers System. Direction for management of designated rivers will be through the designating legislation, Daniel Boone National Forest LRMP and River Management Plans which would emphasize that the rivers and their watersheds will be managed as ecological units. Emphasis will be on preserving and protecting the relationships between the watersheds, the land, and the river or aquatic ecosystems.

#### Water Quality and Quantity

Non-designation of the Cumberland River, Marsh Creek, and the Rockcastle River allows proposals for impoundments to be considered on a site-specific basis. It is important to remember that this alternative does not imply that any impoundment would be approved. The decision to approve or disapprove an impoundment would be the subject of a future project-specific analysis.

The effects of designation on Rock Creek would be a net improvement in water quality on Rock Creek. This would be due to the added emphasis on water quality in the management activities permitted in the watershed of the designated river segment. Any stream sedimentation from possible increased recreational use will be short term and will have no long term effect. Monitoring of users and user impacts would provide data to guide management decisions to prevent or lessen impacts. Protection under the Wild and Scenic Rivers Act would prevent any future impoundments.

#### Private Lands

This alternative would have no effect on the private lands located in the Rock Creek corridor since it would emphasize willing seller fee acquisition.

Additional management controls would be needed to avoid potential impacts on private lands, from increased recreation use.

#### Social

This alternative would not have any significant impact on the lifestyles of area residents, and any change in area economics from tourism would be localized. Roads accessing the corridors would be evaluated on a case by case basis to determine if they are appropriate in the corridors. Some restrictions on present Federal Lands may be required to protect the river values, such as restrictions on ORV use in the river corridors. This would change present use in some cases. Management guidelines for rivers with classification of Scenic or Recreational do not differ significantly from current timber management guidelines. The major difference would be additional restrictions placed on timber management activities within the river corridor to protect and enhance river values. There is a potential reduction of 0.7% ASQ with a potential loss of up to 1.9 timber related jobs if this area is found unsuitable for timber management. Increases in tourism and associated recreational activities have the potential for

creating 1.4 recreation related jobs, slightly improving the economy of local communities.

This alternative would not provide any incentive for State and private river protection measures for Marsh Creek and would not support State protective measures on the Cumberland and Rockcastle Rivers, but would support State protective measures on Rock Creek. This alternative would provide for possible partnership projects between Federal, State, Local, and private landowners in the Rock Creek corridor but would not provide incentive for possible partnership projects on Marsh Creek, and the Cumberland and Rockcastle Rivers.

## Fisheries

Possible future impoundments of non-designated rivers would change stream fisheries into lake fisheries. Impoundments would be detrimental to those organisms and their hosts or habitats that require free-flowing water conditions.

Marsh Creek would not have the benefit of either State or Federal designation.

Designation of Rock Creek would prevent future impoundments and alterations that would change the river's stream fisheries to lake fisheries.

Increased monitoring would provide data to guide management decisions in response to and prevention of adverse user impacts on fisheries.

## Proposed, Endangered, Threatened and Sensitive (PETS) Species

For non-designated rivers, possible future impoundments would be detrimental to PETS species as a result of inundation. Designation of Rock Creek would prevent future impoundments that would change the free-flowing nature and habitat of the rivers. Any increase in visitation will carry with it the increased risk of (largely) inadvertent impacts to rare species on the part of the visitors. Especially vulnerable are those species which occur in fragile or uncommon habitats that are likely to be used by people engaged in river-based recreation activities. Species specific monitoring plans would be established and implemented for all federally listed and Forest sensitive species in river corridors. In the event that recreational activities are found to be impacting federally listed species on federal lands along any of the proposed river corridors, steps will immediately be taken to eliminate the cause of those impacts. Those steps will be worked out promptly and cooperatively with representatives from the Forest Service and the USFWS. Federally listed species known to occur in Rock Creek is the Cumberland Sandwort, and Forest Sensitive species are *Alasmodonta atropurpurea*, *Notropis* sp. (Sawfin Shiner), *Neotoma floridana*, and *Plecotus rafinesquii*. See Appendix K for species specific monitoring plans for PETS species. Monitoring may identify opportunities for improvement of PETS species habitat. Non-designated rivers would be managed under present Forest guidelines.

Designation of one stream would concentrate increased recreational use on that stream, with the potential for habitat degradation.



## Visual Resources

On non-designated rivers, there would be no effect on present visual quality. The outstandingly remarkable scenic values on the Cumberland River and Rockcastle River would be maintained under the Visual Quality Objectives established in the Daniel Boone LRMP.

On Rock Creek, protection of scenic values would be a management objective for all National Forest Land in the river corridors. Visual Quality Objectives would be established appropriate for the classification established. Management activities would not be evident to the casual forest user, or would be evident but not a dominant feature in the landscape.

## Cultural Resources

On non-designated rivers, there would be no additional effect on cultural resources in the river corridors.

Designation of Rock Creek would lead to potential indirect adverse impacts due to increased recreational use. Additional management controls would be needed to avoid the potential impacts of illegally digging in cultural resource sites. Increased monitoring of designated rivers would provide data to guide management decisions in response to and prevention of adverse impacts on cultural resources.

## Recreation

On non-designated rivers, current recreational activities on National Forest lands and private lands would continue. Recreation management on National Forest lands would be subject to the standards and guidelines of the Daniel Boone LRMP. River use in Kentucky shows a gradual increase. Unregulated recreational use could cause overcrowding, lowering the quality of the recreational experience. Under Kentucky Wild River designation, the free-flowing recreational opportunities would be maintained on the Cumberland and Rockcastle Rivers. The outstandingly remarkable recreational values on Marsh Creek would not be protected by either state or federal programs.

National designation would increase public awareness of Rock Creek, potentially increasing its use. National trends of recreation use on designated rivers shows a gradual, small, increase in use which tapers off after a few years. This would be in addition to the trend of increasing use on Kentucky Rivers. The increase in recreational use caused by designation would be concentrated on one river, Rock Creek. There will be an increased potential for man-caused fires.

## Minerals

On non-designated rivers there would be no effects on minerals, oil, and gas exploration and development.

On Rock Creek designation would give the Federal Government the authority under the National Wild and Scenic Rivers Act to acquire scenic easements. These scenic easements would allow the Forest Service to direct management of exploration and production sites in the corridors. There are Reserved



and Outstanding mineral rights in the study corridors. However, there is little potential for development due to the economics of development in those corridors.

## Vegetation

On non-designated rivers, there would be no effects on timber resources.

On Rock Creek, vegetation management in the designated corridor would be secondary to the protection or enhancement of river values. Special emphasis would be placed on outstanding values. There would be minor impacts to the understory (grass, forbs, and shrubs) due to trampling by recreation activities in the river corridors. The slight increase in recreation use projected after designation would be within manageable levels.

### Alternative 4. Recommend only eligible rivers that are not already protected by the State Wild River designation, for designation.

This alternative would recommend only Marsh Creek as suitable for designation in the National Wild and Scenic Rivers System. Direction for management of designated rivers will be through the designating legislation, Daniel Boone National Forest LRMP and River Management Plans which would emphasize that the rivers and their watersheds will be managed as ecological units. Emphasis will be on preserving and protecting the relationships between the watersheds, the land, and the river or aquatic ecosystems.

## Water Quality and Quantity

Non-designation of the Cumberland River, Rock Creek, and the Rockcastle River allows consideration of proposals for impoundments on a site-specific basis. It is important to remember that this alternative does not imply that any impoundment would be approved. The decision to approve or disapprove an impoundment would be the subject of a future project-specific analysis.

The effects of designation on Marsh Creek would be a net improvement in water quality due to the added emphasis on water quality in the management activities permitted within the watersheds of the designated river segment. Any stream sedimentation from possible increased recreational use will be short term and will have no long term effect. Monitoring of users and user impacts would provide data to guide management decisions to prevent or lessen adverse impacts. Protection under the Wild and Scenic Rivers Act would prevent any future impoundments.

## Private Lands

This alternative would have no effect on the private lands located in the Marsh Creek corridor since it would emphasize willing seller fee acquisition. The 1.9-mile segment south of the State Road 478 bridge is 80% privately owned, and there could be more emphasis placed on acquiring private lands in the Marsh Creek corridor.

Additional management controls would be needed to avoid potential impacts due to trespass on private lands, due to increased recreation use.

## Social

This alternative would not have any significant impact on the lifestyles of local residents. Any change in area economics from tourism would be localized. This would not respond to perceived fears by the local community of restrictions on the use of private land and condemnation after designation of the approximately 1.9-mile of Marsh Creek, south of the State Road 478 bridge, which is mostly private land. Roads accessing the corridor would be evaluated on a case by case basis to determine if they are appropriate in the corridors. Some restrictions on present Federal Lands may be required to protect the river values. There would be river management guides developed which would identify and manage for appropriate levels of use in the corridors. This would change present use in some cases. Management guidelines for rivers with classifications of Scenic or Recreational do not differ significantly from current timber management guidelines. The major difference would be additional restrictions placed on timber management activities in the river corridor to protect and enhance river values. There is a potential reduction of 0.5% ASQ with a potential loss of up to 1.4 timber related jobs if this area is found unsuitable for timber management. Increases in tourism and associated recreational activities have the potential for creating 0.14 recreation related jobs, slightly improving the economy of local communities.

This alternative would provide incentive for State and private river protection measures for Marsh Creek but would not reinforce State protective measures on Rock Creek and the Cumberland and Rockcastle Rivers. This alternative would provide for possible partnership projects between Federal, State, Local, and private landowners within the Marsh Creek corridor but would not provide incentive for possible partnership projects between Federal, State, Local, and private landowners within the Rock Creek and Cumberland River corridors.

## Fisheries

Possible future impoundments would change stream fisheries into lake fisheries. Impoundments would be detrimental to those organisms and their hosts or habitats that require free-flowing water conditions.

Marsh Creek would have the benefit of protection under Federal designation.

Designation of Marsh Creek would prevent future impoundments and alterations that would change the river's stream fisheries to lake fisheries. Increased monitoring would provide data to guide management decisions in response to and prevention of adverse user impacts on fisheries.

## Proposed, Endangered, Threatened and Sensitive (PETS) Species

The PETS species in non-designated rivers have the potential to be subject to future impoundments that would change habitat. The inundation of an area may have detrimental effects on certain terrestrial species. Designation of one stream would concentrate increased recreational use on that stream, with the potential for habitat degradation. Any increase in visitation will carry with it the increased risk of (largely) inadvertent impacts to rare species on the part of the visitors. Especially vulnerable

are those species which occur in fragile or uncommon habitats that are likely to be used by people engaged in river-based recreation activities.

Species specific monitoring plans would be established and implemented for all federally listed and Forest sensitive species in river corridors. In the event that recreational activities are found to be impacting federally listed species on federal lands along any of the proposed river corridors, steps will immediately be taken to eliminate the cause of those impacts. Those steps will be worked out promptly and cooperatively with representatives from the Forest Service and the USFWS. There are no known Federally listed species within the study corridors. There are the Forest Sensitive species of *Aster concolor*, *Maianthemum canadense*, *Orontium aquaticum*, *Solidago spathulata*, *Alasmidonta atropurpurea*, *Epioblasma capsaeformis*, *Etheostoma nigrum susanae*, and *Accipiter striatus* known within the study corridor. Non-designated rivers would be managed under present Forest guidelines. See Appendix K for species specific monitoring plans for PETS species. Monitoring may identify opportunities for improvement of PETS species habitat.

### Visual Resources

On non-designated rivers, there would be no effect on present visual quality. The outstandingly remarkable scenic values on the Cumberland River and Rockcastle River would be maintained under the Kentucky Wild River designation and management under standards and guidelines of the FLRMP.

On Marsh Creek, protection of scenic values would be a management objective for all National Forest land in the river corridors. Visual Quality Objectives would be established as appropriate for the classification established. Management activities would not be evident to the casual forest user, or would be evident but not a dominant feature in the landscape.

### Cultural Resources

On non-designated rivers, there would be no additional effect on cultural resources in the river corridors.

Designation of Marsh Creek would lead to potential indirect adverse impacts due to increased recreational use. Additional management controls would be needed to avoid the potential impacts of illegally digging in cultural resource sites. Increased monitoring of designated rivers would provide data to guide management decisions in response to and prevention of adverse impacts on cultural resources.

### Recreation

On non-designated rivers, current recreational activities on National Forest lands and private lands would continue. Recreation management on National Forest lands would be subject to standards and guidelines of the Daniel Boone FLRMP. River use in Kentucky shows a gradual increase. Unregulated recreational use could cause overcrowding, lowering the quality of the recreational experience. Free-flowing recreational opportunities



would be maintained on the Cumberland River, Rock Creek, and the Rockcastle River under Kentucky Wild River designation.

National designation would increase public awareness of Marsh Creek, potentially increasing its use. National trends of recreation use on designated rivers shows a gradual increase in use which tapers off after a few years. This would be in addition to the trend of increasing use on Kentucky Rivers. The increase in recreational use caused by designation would be concentrated on one river, Marsh Creek.

#### Minerals

On non-designated rivers, there would be no effects on minerals, oil, and gas exploration and development.

On Marsh Creek designation would give the Federal Government the authority under the National Wild and Scenic Rivers Act to acquire scenic easements. These scenic easements would allow the Forest Service to direct management of exploration and production sites in the corridors. There are Reserved and Outstanding mineral rights in the study corridors. However, there is little potential for development due to the economics of development in those corridors.

#### Vegetation

On non-designated rivers, there would be no effects on vegetation resources.

On Marsh Creek, vegetation management in the designated corridor would be secondary to the protection or enhancement of river values. Special emphasis would be placed on outstanding values. There would be minor impacts to the understory (grass, forbs, and shrubs) due to trampling by recreation activities in the river corridors. The slight increase in recreation use projected after designation would be within manageable levels.

Alternative 5. (Preferred Alternative) Recommend only the eligible river segments that have Outstandingly Remarkable Values representing the Physiographic Region, and which respond to public issues, for designation.

This alternative would find all eligible river segments suitable for designation in the National Wild and Scenic Rivers System, except the 1.9-mile section on Marsh Creek south of the State Road 478 bridge. Direction for management of designated rivers will be through the designating legislation, Daniel Boone National Forest LRMP and River Management Plans which would emphasize that the rivers and their watersheds will be managed as ecological units. Emphasis will be on preserving and protecting the relationships between the watersheds, the land, and the river or aquatic ecosystems.

#### Water Quality and Quantity

This alternative would result in a net improvement in water quality due to the added emphasis on water quality in the management activities permitted in the watersheds of designated river segments. Any stream sedimentation



from possible increased recreational use will be short term and will have no long term effect. Monitoring of users and user impacts would provide data to guide management decisions to prevent or lessen adverse impacts. Protection under the Wild and Scenic Rivers Act would prevent any future impoundments.

Non-designation of the excluded segment allows the consideration of proposals for impoundments on a site-specific basis. It is important to remember that this alternative does not imply that any impoundment would be approved. The decision to approve or disapprove an impoundment would be the subject of a future project-specific analysis.

#### Private Lands

This alternative would have no effect upon the private lands located in the designated corridors since it would emphasize willing seller fee acquisition. Excluding the 1.9-mile segment south of the State Road 478 bridge would remove the possibility of condemnation of private lands to protect outstandingly remarkable values in an area that is mostly privately owned.

Additional management controls would be needed to avoid potential impacts due to trespass on private lands from increased recreation use.

#### Social

Public concerns for the preservation of free-flowing rivers, which led to the development of the Wild and Scenic Rivers Act, would be recognized. In general, there would be no significant effect on the lifestyles of local residents. Uses of private land occurring at the time of this study would continue. Management guidelines for rivers with classifications of Scenic or Recreational do not differ significantly from current timber management guidelines. The major difference would be additional restrictions placed on timber management activities in the river corridors to protect and enhance river values. There is a potential reduction of 2.5% ASQ with a potential loss of up to 6.7 timber related jobs if this area is found unsuitable for timber management. Increases in tourism and associated recreational activities have the potential for creating 2.4 recreation related jobs, slightly improving the economy of local communities. River values would be preserved through standards and guidelines. Roads accessing the corridor would be evaluated on a case by case basis to determine if they are appropriate in the corridors. Some restrictions on present Federal Lands may be required to protect the river values. There would be river management guides developed which would identify and manage for appropriate levels of use in the corridors. This would change present use in some cases.

The exclusion of the segment of Marsh Creek south of the State Road 478 bridge would respond to the perceived fears by the local communities of restrictions of uses on private land and condemnation after designation of river segments that are mostly privately owned.

This alternative would provide incentive for State and private river protection measures for Marsh Creek except for the 1.9 mile segment south of the State Road 478 bridge and would support State protective measures for Rock Creek and the Cumberland and Rockcastle Rivers. This alternative

would provide for possible partnership projects between Federal, State, Local, and private landowners.

### **Fisheries**

Designation would prevent future impoundments and alterations that would change the rivers' stream fisheries to lake fisheries. Increased monitoring would provide data to guide management decisions in response to or prevention of adverse user impacts on fisheries.

Fisheries on the excluded segment would remain at present levels, and would continue to be managed on National Forest lands under the Daniel Boone LRMP. This alternative allows the possibility of future impoundments changing some stream fisheries to lake fisheries in the 1.9-mile segment on Marsh Creek, south of the State Road 478 bridge.

### **Proposed, Endangered, Threatened, and Sensitive (PETS) Species**

Designation would prevent future impoundments that would change the free-flowing nature and habitat of the rivers. Any increase in visitation will carry with it the increased risk of (largely) inadvertent impacts to rare species on the part of the visitors. Especially vulnerable are those species which occur in fragile or uncommon habitats that are likely to be used by people engaged in river-based recreation activities. Species specific monitoring plans would be established and implemented for all federally listed and Forest sensitive species in River Corridor. In the event that recreational activities may affect federally listed species on federal lands along any of the proposed river corridors, steps will immediately be taken to eliminate the cause of those impacts. Those steps will be worked out promptly and cooperatively with representatives from the Forest Service and the USFWS. See appendix K for species specific monitoring plans for PETS species. Monitoring may identify opportunities for improvement of PETS species habitat.

Protection of PETS species on the excluded segment would remain at present levels and continue to be managed under Daniel Boone FLRMP Standards and Guidelines, and appropriate Threatened and Endangered Species protection laws. This alternative allows the possibility of future impoundments, leading to inundation which would alter the habitat of PETS species.

### **Visual Resources**

Protection of scenic values through appropriate Visual Quality Objectives would be the management objective for all National Forest land in the river corridors. Visual Quality Objectives would be established as appropriate to the classification established. Management activities would not be evident to the casual forest user, or would be evident but not a dominant feature in the landscape.

The visual resources on the National Forest land in the excluded segment would be managed under the Daniel Boone National Forest LRMP.

### **Cultural Resources**

Designation of rivers would lead to potential indirect adverse impacts due to increased recreational use. Additional management controls would be

needed to avoid the potential impacts of illegally digging in cultural resource sites. Increased monitoring of designated rivers would provide data to guide management decisions in response to and prevention of adverse impacts on cultural resources.

There would be no additional effects on cultural resources on the excluded segment.

### Recreation

National designation would increase public awareness of the rivers, potentially for increasing their use. National trends of recreation use on designated rivers shows a gradual increase in use which tapers off after a few years. This would be in addition to the trend of increasing use on Kentucky Rivers. This alternative would provide visitors a wide range of recreation opportunities available from four different free-flowing rivers. Users would still be able to access hunting, fishing, and camping spots in designated river corridors. Designation would provide the means and encouragement to determine the carrying capacity, and to develop appropriate measures to prevent overuse. Monitoring of use and impacts would allow the Forest Service to set up regulatory measures if the carrying capacity were to be exceeded in the future. There will be an increased potential for man-caused fires.

On the excluded segment, current recreation activities on National Forest lands and private lands would continue. Recreation management on National Forest lands would be under standards and guidelines of the Daniel Boone LRMP. Recreation on private lands would be regulated by the owners.

### Minerals

Designation would give the Federal Government the authority under the National Wild and Scenic Rivers Act to acquire scenic easements. These scenic easements would allow the Forest Service to direct management of exploration and production sites in the corridors. There are Reserved and Outstanding mineral rights in the study corridors. However, there is little potential for development due to the economics of development in those corridors.

In the excluded segment, there would be no effect on minerals, oil, and gas, exploration or development.

### Vegetation

Vegetation management in the designated corridors would be secondary to the protection or enhancement of river values. Special emphasis would be placed on outstanding values. There would be minor impacts to the understory (grass, forbs, and shrubs) due to trampling by recreation activities in the river corridors. The slight increase in recreation use projected after designation would be within manageable levels.

Timber resources in the excluded segment on National Forest land would be managed under the standards and guidelines of the Daniel Boone LRMP.



## Other Environmental Consequences

### Adverse Effects that Cannot Be Avoided

Most public contacts support the idea of some or all study segments as additions to the National Wild and Scenic Rivers system, however, some increases in environmental degradation, such as on water quality, PETS species habitat, and private lands, may result from increased use due to designation. Individual River Management Guides would address mitigating actions to reduce the environmental degradation along the rivers that are designated. Congressionally-designated rivers would be under the statutory protection of the Wild and Scenic Rivers Act. Rivers not designated would continue to be protected under Forest management standards and guidelines in the Daniel Boone National Forest LRMP.

Implementation of any of the alternatives would result in social conflicts between various groups simply because any action or lack of action will have some aspects that are acceptable to some people and not acceptable to others.

### Local Short-term Uses of Man's Environment, and Maintenance and Enhancement of Long-Term Productivity

Implementation of any alternative would continue to provide opportunities for short-term resource yields. Forest management standards and guidelines in the Daniel Boone LRMP ensure that short-term resource yields do not significantly impair the land's long-term productivity. Congressional designation of any alternative except Alternative 1 would enhance and

protect the long-term free-flowing river recreational opportunities and outstandingly remarkable values on the rivers included in that alternative.

### Irreversible or Irretrievable Commitments of Resources

An irreversible commitment is one in which non-renewable resources are permanently lost. None of the alternatives result in use or modification of resources that are considered nonrenewable, such as natural gas. There would be no irreversible commitment of resources. Designation would protect Threatened, Endangered, or Sensitive plants or animals from becoming irreversibly lost due to impoundment construction.

An irretrievable commitment is one in which resource production or use is lost while managing an area for another purpose. All of the alternatives reduce the management of some resources and emphasize the management of other resources. For example, timber and some recreation management activities would be subordinate to protecting and preserving the river values.

### Cumulative and Other Effects

It is reasonably foreseeable that the level of future timber harvest will be less in designated river corridors. This would result in a gradual change in the general forest character in the river corridors. Tree species would tend to be shade-tolerant and older. Wildlife habitat would change to encourage species associated with older forests. Visual Resources would gradually change to an old forest, big tree character.

Present recreational use in the corridors has caused some impacts to the soil and water resources, affecting water quality of the study rivers. National trends in river recreation on rivers designated as National Wild and Scenic Rivers indicate, that there would be a small increase in recreation use, which levels off after a short time. Designation would promote increased monitoring, and the encouragement and means to develop appropriate management measures to prevent over-use that would impact water and soil resources in the river corridors, improving water quality.

All river segments in the study have some impacts from past and present activities in the watersheds of the rivers. These are described in detail in chapter 2. Activities such as coal mining, quarrying, agriculture, residential areas and town sites may continue to introduce iron, manganese, sulfates, nitrates, phosphates, pesticides, fecal water, sediment and other pollutants to the river. Designation of any rivers would emphasize water quality with restrictions on management activities on federal lands only. The Forest Service can encourage private landowners to use the same management guidelines identified in the Kentucky Nonpoint Source Management Program. This program was developed in response to Section 319 of the Federal Clean Water Act Amendment of 1987. This program identifies Best Management Practices (BMPs) which are recommended for use in Kentucky to control silviculture nonpoint source pollution.

There would be an improvement in water quality. However, there would still be adverse impacts to water quality due to past, present, and foreseeable future activities on private lands, such as those mentioned above.





## CHAPTER 6. LIST OF AGENCIES, ORGANIZATIONS, AND INDIVIDUALS RECEIVING THIS STUDY REPORT

Copies of this draft study report and DEIS have been sent to, and comments have been requested from, the following people and agencies.

### FEDERAL AGENCIES AND OFFICIALS

Office of Architectural and Environmental Preservation, Advisory Council on Historic Preservations, Washington, D.C.

Soil Conservation Service (SCS), Environmental Coordinator of Ecological Sciences Division, Washington, D.C.

Army Corps of Engineers (COE), Washington, D.C.

Assistant Director, Resource Liaison Development Staff Office of Environmental Review, Washington, D.C.

Director, Office of Environmental Compliance, U.S. Department of Energy, Washington, D.C.

Environmental Impact Statement Review Coordinator, Environmental Protection Agency, Atlanta, GA

Advisor on Environmental Quality, Federal Energy Regulatory Commission, Washington, D.C.

Office of Environmental Affairs, Washington, D.C.

Ohio River Basins Commission, Lexington, KY

Director, Environmental Quality Staff, Knoxville, TN

U.S. Department of the Interior, Park Service, Oneida, TN

Honorable Harold Rogers, Washington, D.C.

Honorable Jim Bunning, Washington, D.C.

Honorable Scotty Baesler, Washington, D.C.

Honorable Wendell H. Ford, Washington, D.C.

Honorable Mitch McConnell, Washington, D.C.

USDI, Fish and Wildlife Service, Atlanta, GA

Richard B. Grabowski, Bureau of Mines, Denver, CO

## STATE AGENCIES AND OFFICIALS

Ron Cook, Manager, State Clearinghouse, Frankfort, KY

Honorable Danny R. Ford, Mt. Vernon, KY

Honorable Jo Elizabeth Bryant, Williamsburg, KY

Honorable Tommy Todd, Nancy, KY

Honorable Clarence D. Noland, Irvine, KY

Honorable Tom Jenson, London, KY

Honorable Barry Metcalf, Richmond, KY

Honorable John D. Rogers, Somerset, KY

Honorable Gene Huff, London, KY

Mr. Wm. Horace Brown, Chairman, Environmental Quality Commission,  
Frankfort, KY

Tom Bennett, Kentucky Department of Fish and Wildlife Resources, Frankfort,  
KY

Phillip J. Shepherd, Natural Resources and Environmental Protection  
Cabinet, Frankfort, KY

Robert McCance, Jr., Kentucky State Nature Preserves Commission, Frankfort,  
KY

Dr. Berle Clay, Office of State Archaeology, Lexington, KY

Jack A. Wilson, Kentucky Division of Water, Frankfort, KY

## LOCAL AGENCIES AND OFFICIALS

Honorable William O. Smith, Jackson County Judge-Executive, McKee, KY

Honorable Jerry Taylor, Whitley County Judge-Executive, Williamsburg, KY

Honorable Jimmie W. Greene, McCreary County Judge-Executive, Whitley City,  
KY

Honorable Darrell Beshears, Pulaski County Judge-Executive, Somerset, KY

Honorable Roland D. Mullins, Rockcastle County Judge-Executive, Mt. Vernon,  
KY

Honorable Ledford Karr, Laurel County Judge-Executive, London, KY

Honorable L. C. Reece, Lee County Judge-Executive, Beattyville, KY

Honorable Drexell H. Anderson, Wayne County Judge-Executive, Monticello, KY

James Masters, President, Berea Chamber of Commerce, Berea, KY

Jim Rickard, President, Greater Corbin Chamber of Commerce, Corbin, KY

Warren Greer, President, London/Laurel County Chamber of Commerce,  
London, KY

Harold Rumble, President, Williamsburg Chamber of Commerce,  
Williamsburg, KY

Ken Bean, Executive Director, Somerset-Pulaski County Tourism and  
Convention Commission, Somerset, KY

Mike Simpson, President, Somerset/Pulaski County Tourism and Convention  
Commission, Somerset, KY

Mr. Charles Houk, Chairman, Corbin Tourist and Convention Commission,  
Corbin, KY

Mr. Ken Harvey, Exec. Director, London/Laurel Tourist and Convention  
Commission, London, KY

Mr. Rick Bates, Executive Director, Southeast KY Tourism Project, Somerset,  
KY

Melissa S. Gross, Exec. Director, Berea Tourism Commission, Berea, KY

#### ORGANIZATIONS

Ms. Joyce Porter, President, Kentucky Audubon Council, Falls of the Rough,  
KY

Steve Rice, President, Audubon Society of Kentucky, Lexington, KY

Jim Lee, Executive Director, Kentucky Forest Industries Assoc., Frankfort,  
KY

James Aldrich, Director, Kentucky Nature Conservancy, Lexington, KY

Tom FitzGerald, Director, Kentucky Resources Council, Frankfort, KY

Matt Bennett, Chairman, Kentucky-Tennessee Society of American Foresters,  
Maryville, TN

William B. Andrews, Boone KARST Association, Frankfort, KY

Mr. Darrell Selby, President, League of Kentucky Sportsmen, Russell  
Springs, KY

Susan Patton, Chair, Sierra Club, Taylor Mill, KY

Fred Pfister, President, Trout Unlimited Bluegrass Chapter, Lexington, KY

## LIBRARIES

McCreary County Library, Whitley City, KY

Pulaski County Library, Somerset, KY

Laurel County Library, London, KY

Whitley County Library, Williamsburg, KY

Jackson County Library, McKee, Ky

Eastern Kentucky University, Richmond, KY

University of Kentucky, Lexington, KY

## INDIVIDUALS

John Geddie, Albuquerque, NM

James R. Alley, Lexington, KY

Keith Whitaker, Somerset, KY

Dean Cornette, Louisville, KY

Edmund Nosow, Lexington, KY

PDR, Lexington, KY



## CHAPTER 7. LIST OF PREPARERS

The Interdisciplinary Team members assigned to the Wild and Scenic Rivers Study are:

Name	Project Responsibility	Education
Jorge Hersel	Dispersed Recreation Specialist, Team Leader, 15 years experience	B.S. Forest Management Texas A&M University
Lynda Andrews	Wildlife Biologist, preparation of report, 10 years experience	A.A.S. Veterinary Tech. B.S. Environmental Sci. M.S. Biology Morehead State Univ.
Bill Brumm	Resource Assistant, preparation of report, 20 years experience	B.S. Forest Resource Management Virginia Polytechnic Institute and State University
Alan Colwell	Resource Assistant, preparation of report, 21 years experience	A.S. Natural Science Montreat-Anderson College B.S. Forestry N.C. State University
Jay Snider	Resource Assistant, preparation of report, 21 years experience	B.S. Forest Management Utah State University
Steve Phillips	Wildlife Biologist, preparation of report (vice Lynda Andrews)	B.S. Southern Illinois University

Other Daniel Boone National Forest personnel who contributed to the development of this study are:

Name	Area of Specialization
Robert Strosnider	Recreation
Kevin Lawrance	Forest Planner
David Taylor	Botanist
Vicki Bishop	Fisheries Biologist
George Chalfant	Soils Scientist
Ed Hartsell	Landscape Architect
Ray Bergeron	Geologist
Jon Walker	Hydrologist
John Macgregor	Threatened and Endangered Species Specialist
Randy Boedy	Archeologist
Tom Kean	Civil Engineering Technician
Virginia Fields	Resource Assistant
Wenard Weaver	Silviculturist

Other personnel who contributed to the development of this study are:

Name	Area of Specialization
Richard Greenhalgh	Economist, Southern Region, Regional Office
Donald English	Outdoor Recreation, Forest Sciences Lab., GA
Patty Cobb	Editing, PDR Information Services, Lexington
Bobbie Newman	Editing, PDR Information Services, Lexington
Morgan Jones	Kentucky Wild Rivers Program Coordinator
Doug Stephens	KDFWR, Fisheries Biologist

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## GLOSSARY

**abrogate.** Do away with.

**alluvial.** Made up of clay, sand, or other material deposited by running water.

**amenity.** A resource which does not have market value and/or is not commodity.

**aquatic.** Living or growing in water.

**archaeologist.** Specialist which studies and recoveres evidence of man's life and culture in the past.

**calcareous.** Soil or rock which contains free calcium carbonate or calcium-magnesium carbonate.

**colluvium.** A deposit of rock fragments and soil material deposited by gravity at the base of a steep slope.

**confluence.** The flowing together of two or more streams or rivers.

**conglomerate.** Sedimentary rock with the appearence of gravel. Rock and mineral fragments composing this rock range in size and are usually rounded and smoothed by water action as the fragments were transported.

**coniferous.** Group of tree species which bear cones.

**corridor.** A linear strip of land identified for the present or future location of a specific condition or project.

**creel.** A container carried by anglers to carry fish.

**Cumberland Plateau.** Geomorphic section within the Appalachian Plateau physigraphic Province.

**deciduous.** Group of tree species which have their leaves fall or shed at a specific season or stage of growth.

**DEIS.** Draft Environmental Impact Statement

**dendritic.** In a branching pattern. Similiar to the pattern of veins in a leaf.

**designation.** The act of selecting for a particular

**easement.** The right to make limited use of another's real property.

**EIS.** Environmental Impact Statement

**endemic.** Native or confined to a certain region; having a comparatively restricted distribution.

**erode.** To wear away or remove by wind, water, or other agents.

**escarpment.** A long, more or less continuos cliff or steep slope facing in one general direction.

fauna. The animals of a particular region.

FDR. Forest Development Road

flood plain. The lowland and relatively flat area adjoining the rivers, including that area subject to a 1%, or greater, chance of flooding in any given year.

fluvial. Produced by the action of a stream or river.

geomorphology. The interpretation of present landforms and their relationships to underlying structures, and the geologic changes as recorded by these surface features.

habitat. An area capable of producing similiar plant or animal communities.

herbaceous. Green and leaflike in appearance, as distinguished from woody plants.

hibernaculum. The shelter of a hibernating animal.

implementation. A definite plan or procedure to ensure completion.

impoundment. To accumulate water in a reservoir.

interagency. Agencies cooperating together.

inundation. Flooding.

LRMP. Land and Resource Management Plan

morphologic region. A region seperated out according to its distinctive landforms, rock structures, and evolutionary history.

navigable. A stream in its natural condition is capable of being used to float rafts, logs, etc., and has been used for that purpose.

NRI. National Rivers Inventory.

NWSRS. National Wild and Scenic River Study.

OHV. Any vehicle capable of being operated off a hard paved road.

PETS. Proposed, Endangered, Threatened, and Sensitive species.

physiographic. A region of which all parts are similiar in geologic structure and climate.

promulgated. To put into effect by formal public announcemnt.

rip rap. A loose assemly of broken stones erected in water or on soft ground as a foundation or to strengthen.

riparian. Transition area between aquatic ecosystems and terrestrial ecosystems.

RVD. Recreation Visitor Day. A unit of measure of recreation use.



**scoping process.** Public involvement and analysis used to determine the significant issues, range of alternatives, and environmental impacts to be considered in an Environmental Impact Statement.

**siltation.** Deposit of water-borne sediment.

**sinuous.** Winding.

**species.** Organisms grouped together due to common characteristics and given a common name.

**spur.** A side ridge projecting from a mountain or mountain range.

**strata.** A layer having the same composition through out the layer.

**terminus.** The end of something.

**terrace.** A flat, narrow stretch of ground.

**terrestrial.** Living and growing on land.

**tributary.** A stream or river flowing into a larger stream or river.

**turbidity.** Measure of sediment or foreign particles suspended in water.

**understory.** A forest layer laying beneath and shaded by the main canopy.

**viewshed.** Area seen by a person along a particular corridor.

**watershed.** The region draining into a river, or river system.



## APPENDIX A. PUBLIC INVOLVEMENT AND COMMENTS

People representing many agencies contributed to the Wild and Scenic rivers Study. Some of them are:

- Morgan Jones, Kentucky Wild Rivers Program Coordinator
- Doug Stephens, Kentucky Department of Fish and Wildlife Resources
- Staff, Daniel Boone National Forests Supervisor's Office, Winchester, KY  
Bradley Powell, Gary Coleman, Charles Eury, Floyd Gibbs, Diane Hitchings, Rex Mann, Larry Martoglio, Robert Strosnider.
- Rick Wilcox, District Ranger, Berea Ranger District, Berea, KY
- John Strojan, District Ranger, London Ranger District, London, KY
- Jerry Stephens, District Ranger, Somerset Ranger District, Somerset, KY
- Mike Melton, District Ranger, Stearns Ranger District, Whitley City, KY
- Charles Huppuch, Rivers Specialist, U.S. Forest Service Regional Office, Atlanta, GA.
- Yvonne Knaebel, Regional Environmental Coordinator, U.S. Forest Service Regional Office, Atlanta, GA.

Public involvement began with a series of open houses that were designed to inform the public of the study and the study process, and to gather the participants' concerns and comments about the study. News releases were distributed through the Associated Press system and followed up by local contacts by Ranger District personnel. These news releases explained the purpose of the study and gave the dates and locations of the open houses.

The Notice of Intent was published in the Federal Register on February 4, 1992. On February 28, 1992, the River Study Team mailed a letter to all the people and organizations on the Forest Land Management Plan mailing list. The purpose of the letter was to inform them of the study and to remind them of the comment period for the scoping process deadline that was published in the Notice of Intent.

A mailing list was compiled from:

- Participants at each public meeting.
- Known landowners within the study corridors.
- Individuals and organizations that had previously displayed an interest in Forest Service planning activities on the Daniel Boone National Forest.
- Various state and local agencies.
- Local public officials.
- Any other interested person, agency, or organization that wanted to be included in the River Study Mailing list.

Dates and Locations of open houses held during the scoping process were:

1. January 13, 1992 (Briefing Meeting) Study team, consultants, and Supervisor's Office staff, Daniel Boone National Forest Supervisor's Office, Winchester, KY
2. January 14, 1992 Laurel County Courthouse, London, KY
3. January 16, 1992 Whitley County Courthouse, Williamsburg, KY
4. January 21, 1992 SKRECC Building, Whitley City, KY
5. January 22, 1992 Forest Supervisor's Office, Winchester, KY
6. January 23, 1992 Jackson County Courthouse, McKee, KY
7. January 31, 1992 Somerset Ranger District Office, Somerset, KY

People who registered at open houses were:

Laurel County Courthouse

Odell Sandy, Somerset, KY  
Ruth Todd, London, KY  
Collins Todd, London, KY  
Michael Beese, London, KY  
Jerry Stephens, Somerset, KY

Whitley County Courthouse

Becky Gibson, Williamsburg, KY  
Don Robinson, Corbin, KY  
Wallace Halcomb, Williamsburg, KY

Jackson County Courthouse

Luther Garrett, McKee, KY  
Fletcher and Anne Gabbard, McKee, KY  
Judy Schmitt, McKee, KY  
Edward and Mrs. McCowan, McKee, KY  
Jack Gabbard, McKee, KY  
Denny Moore, McKee, KY  
Jerry Dean, McKee, KY  
Earl Brockman, McKee, KY  
Russell Smith, London, KY  
Terry Thompson, London, KY  
Lowell Wager, McKee, KY  
Willie O. Smith, McKee, KY  
R. Gay, McKee, KY  
Melvin Marks, McKee, KY

Somerset District Ranger's Office

Ray Mobley, Commonwealth Journal  
Joan Garrison, London, KY  
John Arthur, Somerset, KY  
George Arthur, Somerset, KY  
Earlene Stephens, Somerset, KY



The following table is a summary of comments received about the River Study.

Summary of Comments		
Open Houses		
Date and Name	Comment No.	Specific Comments
January 14, 1992 Laurel County Open House	1	State vs. Federal Designation:
	2	-- Does one supersede the other?
	3	-- Does Federal have more control?
	4	-- Why does Federal designate when State already has?
	5	Condemnation: -- If designated, will owners lose their land?
	6	Mineral rights: -- If designated, will owners be permitted to drill?
	7	Timber rights: -- When timber matures, will owners be permitted to harvest?
	8, 9	Farm land: -- If designated, will owners be permitted to farm their land in the future?
	10	Corridor: -- How much land is involved? -- Could it ever be more or less than one-quarter mile?
January 16, 1992 Whitley County Open House	11	Which portion of the Cumberland was found to be eligible?
	12	In terms of private land, what is the result of designating the corridor?
	13	What is prohibited on private land?
	14	Would the State inhibit strip mining?

Summary of Comments (Page 2 of 8)

Open Houses (Cont'd.)

Date and Name	Comment No.	Specific Comments
January 21, 1992 McCreary County Open House	20	Asked about possible restrictions on private land.
	21	Wondered whether, if designated, existing access would be restricted.
	22	Is In favor of designation of Cumberland River, but concerned about amount of development permitted on the Cumberland.
	23	Public Passageways: -- If roads crossing into corridors have been historically used for access, can the government close them?
	24	Will designating the Cumberland River have an impact on the amount of garbage deposited on stream banks from upstream dumping?
	26	How will this study and designation mesh with the State Wild Rivers regulations?
	27	Expressed a general fear of restricted activities on private land and condemnation of private land.
	25	Fully supports the study.
January 23, 1992 Jackson County Open House	15	Why is the FS again looking at two rivers that didn't qualify as eligible-- War Fork and South Fork of Station Camp Creek?
	16	When will the area be released from current restraints?
	17	Can the State establish other rivers as State Wild Rivers?

Summary of Comments (Page 3 of 8)

Open Houses (Cont'd.)

Date and Name	Comment No.	Specific Comments
	18	Are these rivers protected by other federal regulations?
	19	Does not want the rivers designated, as it would attract outsiders and encourage marijuana growing.
January 31, 1992 Pulaski County Open House	28	Asked about river use restrictions.
	29	Will access to rivers and existing 4-wheel roads along rivers be closed?
	30	Discussed closing roads on private and FS lands.
	31	Asked about possible restrictions regarding corridor use (hunting).
	32	Asked about restrictions on private land activities.
	33	Who has primacy--FS or State--regarding Wild Rivers?
	34	Will the public have input into the individual River Management plans?

Internal Comments

Generated by Forest Service and public contacts during the Eligibility and Classification Studies	35	What are the effects on the ability of private landowners to retain their property and use their land as they choose?
	36	What would be the effects on water quality caused by activities on private lands?
	37	What are the effects on private lands?

Summary of Comments (Page 4 of 8)

Internal Comments (Cont'd.)

Date and Name	Comment No.	Specific Comments
	38	What would be the effects on Threatened and Endangered species caused by increased recreational use generated by designation?
	39	What are the effects on future opportunities for impoundments?
	40	What would be the effects of increased use on the limited public access facilities along the rivers?

General Comments

Date and Name	Comment No.	Specific Comments
February 13, 1992  John Geddie 8040 Bellamah Ct., N.E. Albuquerque, NM 87110	41	Asked to be put on the mailing list.
February 18, 1992  Susan Duncan Assistant State Archaeologist Office of State Archaeology Department of Anthropology University of Kentucky Lexington, KY 40506-0024	43	Will cooperate in dealing with cultural resouces along rivers.
February 28, 1992  Timothy Kuryla EIS Coordinator KY Division of Water 18 Reilly Road Frankfort, KY 40601	42	Will comment when the EA is prepared.



Summary of Comments (Page 5 of 8)

General Comments (Cont'd.)

Date and Name	Comment No.	Specific Comments
<p>March 18, 1992</p> <p>James W. Pulliam, Jr. Regional Director Fish and Wildlife Service U.S. Dept. of the Interior 75 Spring Street, S.W. Atlanta, GA 30303</p>	<p>44</p>	<p>Rockcastle, Cumberland and Rock Creek:</p> <p>-- Recommended that the EIS include an evaluation of whether or not designation of proposed river reaches would have any adverse impacts on wetland areas along the streams.</p> <p>Rock Creek, Cumberland, Marsh Creek, and Rockcastle:</p> <p>-- May support populations of federally-listed Threatened and Endangered, as well as status review, species. Said there was a potential for significant adverse impacts to these species as a result of increased visitation and recreational use of the streams if they are designated.</p> <p>-- Said the EIS should contain a biological assessment that addresses potential impacts to these species, and should include a determination of whether designation of one or more of the proposed stream reaches might affect them. Determinations of "may affect" will require formal consultation with, and issuance of a biological opinion by, the Service.</p> <p>Supports classification and protection of high-quality water courses under wild and Scenic Rivers program. Would not object to designation if measures are included that would ensure protection of valuable wetlands, unique and rare species, and aquatic and terrestrial habitats within designated areas.</p>

Summary of Comments (Page 6 of 8)

General Comments (Cont'd.)

Date and Name	Comment No.	Specific Comments
<p>March 23, 1992</p> <p>James R. Alley 238 Rodes Avenue Lexington, KY 40508</p>	45	<p>Was future flood control considered in selecting river segments and the distances they cover?</p>
<p>March 25, 1992</p> <p>Richard H. Hannan Director KY State Nature Preserves CommissionY 40601 407 Broadway Frankfort, KY 40601</p>	50	<p>Supports efforts to designate segments of Rockcastle and Cumberland, based on scenic qualities.</p> <p>Supports addition of Rock Creek, based on recreational qualities.</p> <p>Supports designation of Marsh Creek from mile 15 downstream to Kentucky 679 bridge as Scenic.</p> <p>Said the Marsh Creek segment from Highway 679 downstream to Cumberland River should be classified as Wild River.</p>
<p>March 26, 1992</p> <p>Jim Aldrich, Director Kentucky Chapter The Nature Conservancy 642 West Main Street Lexington, KY 40508-2018</p>	51	<p>Supports Wild and Scenic status for Rockcastle.</p> <p>Said Wild and Scenic status may be appropriate for segments of other rivers, when full biological importance is considered.</p> <p>Believes that preliminary Forest studies have not focused on best corridor segments in some cases.</p> <p>The Notice of Intent states that the segments of the two streams (Station Camp Creek, War Fork and South Fork) were determined not to possess outstandingly remarkable values. Mr. Aldrich said that this is not correct.</p>

Summary of Comments (Page 7 of 8)

General Comments (Cont'd.)

Date and Name	Comment No.	Specific Comments
<p>March 27, 1992</p> <p>Dean Cornette 852 Linwood Avenue Louisville, KY 40217</p>	47	<p>Recommended that Rockcastle and Cumberland Rivers be included in Wild and Scenic Rivers System.</p>
<p>March 30, 1992</p> <p>Tom FitzGerald, Director Kentucky Resources Council P.O. Box 1070 Frankfort, KY 40602</p>	49	<p>Said Forest Service should not reject classification of Wild for lower section of Marsh Creek.</p> <p>Said classification of Rockcastle should be Wild.</p> <p>Scoping process should include full range of positive, as well as perceived negative, environmental impacts from designation of the study rivers.</p>
<p>March 30, 1992</p> <p>Richard B. Grabowski Intermountain Field Operations Center U.S. Dept. of the Interior Bureau of Mines P.O. Box 25086 Denver, CO 80225</p>	48	<p>Said river areas under consideration should be evaluated to determine if access and other restrictions imposed by inclusion in the NWSRS would impact access to, or development of, significant mineral resources. If no impacts occur, a statement to that effect should be included in upcoming environmental documents.</p>
<p>March 30, 1992</p> <p>Keith Whitaker 14353 Acorn Road Somerset, KY 42501</p>	46	<p>Said OHV trails in the Rockcastle River corridor should be kept open.</p>

Summary of Comments (Page 8 of 8)

General Comments (Cont'd.)

Date and Name	Comment No.	Specific Comments
<p>March 31, 1992</p> <p>Jack A. Wilson, Director KY Division of Water 18 Reilly Road Frankfort, KY 40601</p>	52	<p>Believes the lower segment of Marsh Creek (Segment 1) should be designated Wild.</p> <p>Recommended that Forest Service maintain close cooperation with Division of Water on any streams that may be designated as components of the NWSRS, and that are already classified by the State as State Wild Rivers (notably Cumberland and Rockcastle Rivers and Rock Creek).</p> <p>Urged FS to recognize and consider State-designated Wild River corridor boundaries when recommending boundaries for Federal designation. Said State-mandated corridor boundaries should be adopted by the FS as NWSRS boundaries whenever possible. Urged FS to involve Division of Water in cooperative development of river management plans for rivers whose designations may overlap.</p>
<p>Geraldine Waltz 1887 Hunters Ridge Greenwood, IN 46143</p>	53	<p>Wants to be notified of the results of the study.</p>

The comments in Table 10 above are discussed further in Appendix B.



## APPENDIX B ISSUE DEVELOPMENT

### Initial Issues

During the scoping period, the Forest Service received 53 comments about designating the studied rivers as Wild and Scenic. From these comments, listed in Table 10, Appendix A, the following initial issues (most frequently mentioned concerns) were developed:

1. Private landowners might not retain their properties.

Generated by comments 5, 12, 23, 27, 35, 41, 42, 45, 46, 47, and 48.

2. Private landowners may not be able to use the land as they choose.

Generated by comments 6, 7, 8, 9, 10, 12, 13, 14, 16, 17, 20, 27, 30, 32, 35, 44, and 46.

3. Activities on private land outside designated river corridors may have cumulative impacts on water quality.

Generated by comments 14, 24, 37, 43, 44, 45, 47, and 48.

4. Increased recreational use from designation could result in detrimental effects on private lands.

Generated by comments 12, 19, 37, and 53.

5. Designation or non-designation affect Threatened and Endangered species.

Generated by comments 38, 41, 47, 48, and 49.

6. Designation would eliminate opportunities for future impoundments on South Fork and main Station Camp Creek.

Generated by comments 16, 39, 47, and 48.

7. Designation could increase use on the limited number of access facilities.

Generated by comment 40.

8. Designation would involve continued cooperation between state and federal agencies concerning river corridor boundary and land management direction.

Generated by comments 1, 2, 3, 4, 10, 17, 26, 28, and 33.

9. The findings of the Eligibility and Classification Studies may not have been appropriate.

Generated by comments 11, 15, 17, 48, 49, 50, 51, and 52.

10. Designation may restrict public use of the river and management of National Forest Lands within the corridors.

Generated by comments 16, 17, 18, 22, 23, 28, 29, 30, 31, and 34.

11. Designation may restrict access to river corridors.

Generated by comments 21, 23, 29, 30, and 46.

These 11 initial issues were then evaluated for significance. From this evaluation, six significant issues were developed, in some cases by combining several initial issues into one. There were also two issues that were determined to be non-significant.

### Significant Issues

Significant issues are those issues that are within the scope of this study. These issues were used in the environmental analysis to formulate the five alternatives for selecting the rivers that should be designated Wild and Scenic:

1. Designation of the rivers may effect private land and the owners' ability to use the land as they choose.

Generated by initial issues 1, 2, 4, and 11.

2. Activities on private land outside the study corridors may have a cumulative impact on water quality.

Generated by initial issue 3.

3. Designation or non-designation may affect Threatened and Endangered species.

Generated by initial issue 5.

4. Designation could increase use on the limited number of access facilities.

Generated by initial issue 7.

5. Designation would involve continued cooperation between state and federal agencies concerning river corridor boundaries and land management direction.

Generated by initial issue 8.

6. Designation may restrict public use of the rivers and management of National Forest lands within the river corridors.

Generated by initial issue 10.

### Non-Significant Issues

Non-significant issues are issues that were not considered further because they were (1) outside the scope of this study, (2) covered by a previous study, (3) already decided by law or Forest Plan, or (4) not supported by scientific evidence.

These were the two issues determined to be non-significant:

1. Designation would eliminate opportunities for future impoundments on South Fork and War Fork of Station Camp Creek.

Generated by initial issue 6.

This issue was covered in the Station Camp Creek (South Fork and War Fork) Eligibility and Classification Study. Station Camp Creek (South Fork and War Fork) were found ineligible because they lack regionally or nationally remarkable values. The study was reviewed by this team and the findings of the Eligibility and Classification Study Team were determined to be valid. Therefore, this issue was covered by another study and is outside the scope of this study. The findings of ineligibility allow consideration for proposals for impoundments on a site-specific basis. Laws and regulations other than the Wild and Scenic Rivers Act would determine whether or not impoundment of that area is appropriate.

2. The findings of the Eligibility and Classification Studies may not have been appropriate.

Generated by initial issue 9.

The findings that were thought to be inappropriate were that South Fork and War Fork of Station Camp Creek were ineligible, that the Rockcastle River classification should be Wild instead of Scenic, and that Segment I of Marsh Creek should be classified as Wild instead of Scenic. The Eligibility and Classification Studies were reviewed by this team and the findings were determined to be valid. The findings are described in detail in Chapter III. Therefore, this issue is covered by other studies and is outside the scope of this study.





# APPENDIX C. WATER QUALITY AND STREAMFLOW DATA

DRAINAGE AREA AND WATER QUALITY				
River	Area (sq. Mi.*)	Mean Stream Flow (cfs*)	Mean Conductivity (umho/cm*)	Median pH*
Rockcastle	604	975	170	7.8
Rock	63	113	75	7.5
Marsh	35	63	220	7.0
Cumberland	1,977	3,190	227	7.1
Total	2,679			
*sq. mi. = square miles cfs = cubic feet per second umho/cm = micromoles per centimeter pH = acidity or alkalinity				

Table 2

River	Mean Iron (mg/l*)	Mean Sulfate (mg/l)	Mean Manganese (mg/l)
Rockcastle	.215	24	.095
Rock	.193	9	.030
Marsh	.510	78	.755
Cumberland	.308	54	.245
*mg/l = milligrams per litre			

One of the main impacts effecting water quality, recreation, and fisheries in the proposed wild and scenic rivers is coal mining. Iron, manganese, and sulfate are good indicators of mining. The mean values for each parameter fluctuate between streams, but all are within state standards. They also are not consistently at levels that would be objectionable to recreation users. However, peak values occasionally exceed state standards. These deviations are discussed in the main text.

Sediment concentrations and fecal coliform would have been good indicators of mining, agriculture, and urbanization, but unfortunately meaningful numbers were not readily available. These parameters are discussed in relative terms in the main body of text.

## References

Gaydos M. W., et. al., 1982. Hydrology of Area 17, Eastern Coal Province, Tennessee and Kentucky. U.S. Geological Survey Water Resources Investigations 81-1118, 77p.

Hannum, C. H., 1976. Technique for estimating magnitude and frequency of floods in Kentucky. U.S. Geological Survey Water Resources Investigations 76-62, 70p.

Leist, D. W., et. al., 1982. Hydrology of Area 15, Eastern Coal Province, Tennessee and Kentucky. U.S. Geological Survey Water Resources Investigations 81-1118, 77p.

Walker J. A. and V. Bishop, 1991. Daniel Boone National Forest Stream Inventory Work Plan and Sampling Techniques Manual. Unpublished.

APPENDIX D. Endangered, Threatened, and Proposed Species

SPECIES FROM RIVER CORRIDORS

Table 13. Endangered/Threatened/Proposed Species

SPECIES	USFWS/DBNF STATUS	CUMB. RIVER	ROCKC. RIVER	ROCK CREEK	MARSH CREEK
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Corridor records exist for the following five species:

<u>Arenaria cumberlandensis</u>	E	HP?	HP?	X	HP?
<u>Spiraea virginiana</u>	T	HP	X	-	HP
<u>Villosa trabalis</u>	E	X	X	-	-
<u>Phoxinus cumberlandensis</u>	T	X	HP	-	X
<u>Falco peregrinus</u>	E	HP	X	HP	HP

The U.S. Fish and Wildlife Service also lists these species for the area:

<u>Conradina verticillata</u>	T	HP	HP?	-	HP?
<u>Hemistena lata</u>	E	HP	HP	-	-
<u>Haliaeetus leucocephalus</u>	E	HP	HP	HP	HP
<u>Picoides borealis</u>	E	HP	HP	HP	HP
<u>Myotis grisescens</u>	E	HP	HP	HP	HP
<u>Myotis sodalis</u>	E	HP	HP	HP	HP
<u>Plecotus townsendii virginianus</u>	E	HP?	HP?	HP?	HP?

P = Proposed

E = Endangered

T = Threatened

X = Documented from proposed wild/scenic/recreational corridor

HP = Suitable habitat is present in proposed corridor

HP? = Suitable habitat present but corridor is outside known range

- = No documentation of species occurring in proposed corridor

Note: Hemistena lata probably no longer occurs in the project area.

**Forest Sensitive and Proposed Sensitive Species  
from River Corridor**

(Page 1 of 3)

SPECIES	DBNF STATUS	CUMB. RIVER	ROCKC. RIVER	ROCK CREEK	MARSH CREEK
<b>PLANTS</b>					
<u>Aconitum uncinatum</u>	S	-	X	-	-
<u>Aster concolor</u>	S	-	-	-	X
<u>Boykinia aconitifolia</u>	S	X	-	-	-
<u>Carex stricta</u>	S	X	X	-	-
<u>Ceanothus herbaceus</u>	S	-	X	-	-
<u>Clematis glaucophylla</u>	S	X	-	-	-
<u>Comptonia peregrina</u>	S	-	X	-	-
<u>Cypripedium kentuckiense</u>	S	-	X	-	-
<u>Eupatorium luciae-brauniae</u>	S	X	-	-	-
<u>Gratiola pilosa</u>	S	X	-	-	-
<u>Lathyrus palustris</u>	S	X	-	-	-
<u>Maianthemum canadense</u>	PS	X	-	-	X
<u>Minuartia glabra</u>	S	-	X	-	-
<u>Orontium aquaticum</u>	S	X	-	-	X
<u>Platanthera integrilabia</u>	S	X	-	-	-
<u>Podostemum ceratophyllum</u>	PS	X	-	-	-
<u>Polemonium reptans var. villosum</u>	S	-	X	-	-
<u>Solidago spathulata</u>	S	X	X	-	X
<u>Tephrosia spicata</u>	S	X	-	-	-
<u>Trichomanes boschianum</u>	PS	X	-	-	-
<u>Veratrum parviflorum</u>	PS	X	-	-	-
<u>Viola tripartita</u>	S	X	-	-	-
<b>MUSSELS</b>					
<u>Alasmidonta atropurpurea</u>	S	X	-	X	X
<u>Epioblasma capsaeformis</u>	S	X	-	-	X
<u>Lampsilis ovata</u>	S	X	-	-	-
<b>FISHES</b>					
<u>Acipenser fulvescens</u>	S	X	-	-	-
<u>Etheostoma cinereum</u>	PS	-	X	-	-
<u>Etheostoma nigrum susanae</u>	S	X	-	?*	X
<u>Notropis sp. (Sawfin Shiner)</u>	S	-	-	X	-
<b>AMPHIBIANS</b>					
<u>Aneides aeneus</u>	PS	X	-	-	-
<b>BIRDS</b>					
<u>Accipiter striatus</u>	S	-	-	-	X
<u>Corvus corax</u>	S	-	X	-	-

S = Sensitive Species

PS = Proposed Sensitive Species

X = Documented from proposed wild/scenic/recreational corridor

- = No documentation of species occurring in proposed corridors

\* = The Kentucky Department of Fish and Wildlife Resources has two specimens of Etheostoma nigrum that were collected from Rock Creek, but their subspecific identity at this time is unknown. They may represent new records for E. n. susanae.



(Page 2 of 3)

Forest Sensitive and Proposed Sensitive Species  
from River Corridors (Cont'd)

SPECIES	DBNF STATUS	CUMB. RIVER	ROCKC. RIVER	ROCK CREEK	MARSH CREEK
<b>MAMMALS</b>					
<u>Neotoma floridana magister</u>	S	X	X	-	-
<u>Plecotus rafinesquii</u>	S	-	X	X	-
<b>PLANTS</b>					
<u>Aureolaria patula</u>	S	-	-	-	-
<u>Paxistima canbyi</u>	S	-	-	-	-
<u>Hexastylis contracta</u>	PS	-	-	-	-
<u>Silene regia</u>	PS	-	-	-	-
<u>Marshallia grandiflora</u>	S	-	-	-	-
<u>Schwalbea americana</u>	S	-	-	-	-
<b>SNAILS</b>					
<u>Lithasia armigera</u>	-	-	-	-	-
<u>Lithasia geniculata</u>	-	-	-	-	-
<b>MUSSELS</b>					
<u>Epioblasma brevidens</u>	S	-	-	-	-
<u>Villosa ortmanni</u>	-**	-	-	-	-
<u>Quadrula cylindrica strigillata</u>	S**	-	-	-	-
<u>Pleurobema oviforme</u>	S	-	-	-	-
<u>Toxolasma lividus</u>	S	-	-	-	-
<u>Pleurobema clava</u>	S**	-	-	-	-
<b>FISHES</b>					
<u>Etheostoma squamata</u>	S**	-	-	-	-
<b>AMPHIBIANS</b>					
<u>Cryptobranchus alleganiensis</u>	S	-	-	-	-
<b>BIRDS</b>					
<u>Aimophila aestivalis</u>	S	-	-	-	-
<b>MAMMALS</b>					
<u>Myotis subulatus leibii</u>	S	-	-	-	-
<u>Sorex hoyi winnemana</u>	S	-	-	-	-

S =

PS =

X = Documented from proposed wild/scenic/recreational corridor

- = No documentation of species occurring in proposed corridors

\*\* = Villosa ortmanni is a mussel that is endemic to the Green River drainage of central and western Kentucky and does not occur on or near DBNF. Quadrula cylindrica strigillata is a mussel that is endemic to the Tennessee River drainage, and does not occur in the DBNF area. Pleurobema clava is a synonym for Pleurobema oviforme. ( Some authorities accept P. oviforme as a good species while others do not; however, only one of these names would apply to the DBNF population.) Etheostoma squamata should have been listed as Percina squamata.

Table 14 Forest Sensitive and Proposed Sensitive Species (Page 3 of 3)  
from River Corridors (Cont'd)

Notes:

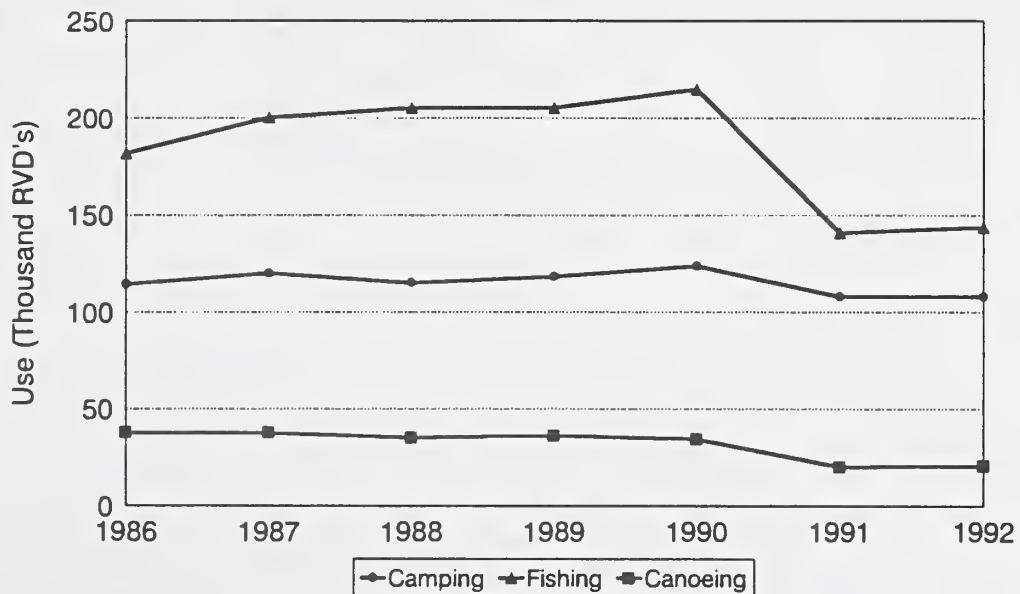
1. The aquatic snails of the genus Lithasia are Federal C-2 species that are not tracked by the Kentucky State Nature Preserves Commission. Both probably occurred at least historically in the DBNF; shells of one or both have been picked up in rock shelters along the Cumberland River and its larger tributaries by Forest archaeologists.
2. According to the U.S. Fish and Wildlife Service, three species (Epioblasma brevidens, Pleurobema clava, and Platanthera integrilabia) are presently undergoing status surveys. These will then be proposed for listing if the results of the surveys indicate that they should be.

## APPENDIX E. RIVER-RELATED USES

Forest Trends in River Related Uses (Thousand RVD's)*							
Activity	1986	1987	1988	1989	1990	1991	1992
Camping	114.5	120.0	115.3	118.4	123.7	108.1	108.1
Fishing	181.8	200.3	205.3	205.3	214.9	140.9	143.7
Canoeing	37.8	37.8	35.3	36.3	34.7	20.3	20.9

\*RVD = Recreation Visitor Day.  
 Data is based on USDA Forest Service Recreation Information Management Form 2300-1, Recreation Use Source Document 1986-1992.

Represented graphically, the data looks like this:



Based on district observations, outfitter guide special use permit records, and discussions with users, below is the best estimate of use, in thousands of Recreation Visitor Days (RVD's), on rivers studied in detail:

#### CUMBERLAND RIVER

	Rafting	Kayaks/ Canoes	Fishing	Hiking	OHV	Other	Total
1992	9.2	3.3	0.8	2.1	0.4	0.6	16.4
1991	7.3	3.1	0.8	2.0	0.4	0.6	14.2
1990	6.1	3.1	0.8	2.0	0.3	0.6	12.9
1989	3.3	1.9	0.7	1.8	0.3	0.6	8.6
1988	3.8	2.4	0.6	1.6	0.3	0.5	9.2

#### LOWER CUMBERLAND

	Rafting	Kayaks/ Canoes	Fishing	Hiking	OHV	Other	Total
1992	9.1	2.1	0.7	2.1	0.0	0.6	14.6
1991	7.2	2.0	0.7	2.0	0.0	0.6	12.5
1990	6.0	2.0	0.7	2.0	0.0	0.6	11.3
1989	3.3	0.8	0.6	1.8	0.0	0.6	7.1
1988	3.8	1.3	0.5	1.6	0.0	0.5	7.7

#### UPPER CUMBERLAND

	Rafting	Kayaks/ Canoes	Fishing	Hiking	OHV	Other	Total
1992	0.1	1.2	0.1	0.0	0.4	0.0	1.8
1991	0.1	1.1	0.1	0.0	0.4	0.0	1.7
1990	0.1	1.1	0.1	0.0	0.3	0.0	1.6
1989	0.0	1.1	0.1	0.0	0.3	0.0	1.5
1988	0.0	1.1	0.1	0.0	0.3	0.0	1.5



ROCKCASTLE RIVER

	Rafting	Kayaks/ Canoes	Fishing	Hiking	OHV	Other	Total
1992	0.0	2.9	0.8	1.0	2.4	0.8	7.9
1991	0.0	2.8	0.8	0.9	2.2	0.8	7.5
1990	0.0	2.8	0.8	0.9	2.1	0.7	7.3
1989	0.0	2.7	0.7	0.9	2.0	0.7	7.0
1988	0.0	2.7	0.7	0.8	1.8	0.7	6.7

ROCK CREEK

	Day Use	Camping	Fishing	Total
1992	8.8	25.4	8.3	42.5
1991	8.0	23.1	7.5	38.6
1990	7.3	21.0	6.8	35.1
1989	6.6	19.1	6.2	31.9
1988	6.0	17.4	5.6	29.0

MARSH CREEK

	Swim/Other	Canoe/Float	Fish/Hunt	Total
1992	1.04	0.22	3.00	4.26
1991	1.03	0.21	2.95	4.19
1990	1.02	0.21	2.90	4.13
1989	1.01	0.21	2.85	4.07
1988	1.00	0.20	2.80	4.00



## Rivers

In the Wild and Scenic Rivers Act, Public Law 88-29, PL 90-542, Congress called for the preparation and maintenance of a continuing inventory and evaluation of the outdoor recreation needs and resources of the United States and the identification of potential wild, scenic, and recreational river areas within the Nation.

The Nationwide Rivers Inventory, compiled by the National Park Service, January 1982, is in response to this direction. It contains a compilation of comprehensive, consistent data on the Nation's significant free-flowing streams. This inventory has been accepted by the Forest Service as an inventory of rivers which should be addressed in the Land Management Planning process.

The rivers identified in this inventory were arrived at through the following process. First, all rivers and river segments within the United States, 25 miles or longer in length, were inventoried and evaluated. Three general criteria were used in the process.

- . the degree to which the river is free-flowing
- . the degree to which the river and corridor are undeveloped
- . the outstanding natural and cultural characteristics of the river and its immediate environment

Steps in the process were:

Water Resource Development. Segments of rivers impounded by dams or channelized were identified and deleted from the inventory. Minor water resources development, such as check dams, dikes, and levees were assigned point values for each kind of development based upon the degree of interruption of the free-flowing characteristics of the river and intrusion on the natural qualities of the river banks.

Cultural Development. Developments within one-quarter mile of the banks of the rivers were identified. Cities over 10,000 population, power plants and active strip mines disqualified a river segment from further consideration. Other developments such as bridges, residences and roads were assigned a point value. River segments having a cumulative point-per-mile total of 100 or more were disqualified.

Sustained Flow. Intermittent streams were disqualified from further evaluation except in arid regions where many streams are characteristically intermittent.

Consultation I. The preliminary list of selected rivers resulting from the first four steps was circulated for review to Federal and State resource agencies, citizen groups and individuals. Meetings were held to revise the preliminary list.

Field and Video Evaluation. The consultation resulted in a revised list of river segments. Video analysis resulted in further deletion of river segments and portions of segments.

Consultation II. Following field and video evaluation, the revised list of stream segments was circulated. Comments from this review were used to prepare the final list.

The rivers inventory was conducted by the Department of the Interior with the cooperation of state and local agencies. However, listing of these rivers is in no way an endorsement by the participating agencies that the rivers and river segments are the best within their jurisdiction, nor that they feel any specific action should be taken to protect these rivers.

All of the rivers listed in Table 1, for the present time, except the Red River, will be considered as possible eligible rivers for the National Wild and Scenic River System. The Red River will be discussed later in this section. All rivers are completely or partially within the boundaries of the Daniel Boone National Forest.

During the first generation of this Forest Plan, at the rate of one river per year, these rivers will be studied on an individual basis to determine their final eligibility. If found eligible, the river or river segments will be given a potential classification. Until this decision is made, each individual river and its adjacent environments consisting of an area of 1/4 mile in distance on each side, will be managed using the same range of management techniques that have caused these rivers to be considered as possible candidates to the National System.

This management will include the necessary measures to ensure that the free-flowing nature of the river, and its natural elements which might cause it to become eligible, are not diminished. No individual management prescriptions will be established to address this level of protection, but rather each river and river segment will be dealt with on an individual basis as work is prescribed.

After final eligibility determinations and decisions are made, eligible rivers or river segments will be analyzed for their potential classification and finally for their suitability. The Forest will recommend, to the Administration, those suitable streams for designation as study streams.

The Administration or Congress may then act to designate individual rivers as study segments, thus paving the way for their designation or non-designation as components of the National Wild and Scenic River System.

As mentioned previously, the Red River, more precisely the 19.4-mile segment which passes through the Daniel Boone National Forest, is different from the other rivers in this inventory. The Red River has been designated by Congress for study. The Forest Service has completed the Draft Study/Environmental Impact Statement for the Red River at this time. This study and its recommendations are subject to public and administrative review before a final recommendation is made to the President and Congress.



NATIONWIDE RIVERS INVENTORY  
RIVERS IN KENTUCKY

River	Other States	County	Congressional District	Segment Description	Length (in miles)
1. Cumberland	TN	Whitley	5	RM 522, Camp Creek Junction, to RM 582, two miles downstream of I-75 bridge	30
2. Little South Fork of Cumberland		McCreary Wayne	5	RM 0, confluence with Cumberland River, to RM 32, TN State line	32
3. Marsh Creek		McCreary	5	RM 0, confluence with Cumberland River, to RM 18, KY 92 bridge and headwaters	18
4. Red		Clark Estill Powell Menifee Wolfe	6/5 & 7	RM 0, confluence with Kentucky River, to RM 59, Clark Branch junction	59
5. Rock Creek	TN	McCreary	5	RM 0, confluence with South Fork of Cumberland River, to RM 22, TN State line	22
6. Rockcastle		Pulaski Laurel Rockcastle	5	PM 7, KY 192 bridge, to RM 31, US 25 bridge to Laurel Co.	24
7. South Fork of Kentucky		Lee Owsley Clay	5	RM 0, confluence with Kentucky River, to RM 44, 0.5 mile below TN 1482 bridge near Oneida	11
8. South Fork of Stanton Camp Creek		Jackson	5	RM 0, confluence with Station Camp Creek, to RM 22, near Long Branch	22
9. Station Camp Creek and War Fork		Estill Jackson	5	PM 14, Alumbaugh, to PM 32, near Privett	13



## APPENDIX G

### MANAGEMENT GUIDELINES FOR WILD, SCENIC, AND RECREATIONAL RIVER CORRIDORS FSH 1909.12, Section 8.2

#### WILD RIVERS

a. Timber Production: Cutting of trees will not be permitted except when needed in association with a primitive recreation experience (such as clearing for trails and protection of users) or to protect the environment (such as control of fire). Timber outside the boundary but within the visual corridors, will be managed and harvested in a manner to provide special emphasis to visual quality.

b. Water Supply: All water supply dams and major diversions are prohibited.

c. Hydroelectric Power: No development of hydroelectric power facilities would be permitted.

d. Flood Control: No flood control dams, levees, or other works are allowed in the channel or river corridor. The natural appearance and essentially primitive character of the river area must be maintained.

e. Mining: New mining claims and mineral leases are prohibited within 1/4 mile of the river. Valid claims would not be abrogated. Subject to regulations (36 CFR 228) that the Secretaries of Agriculture and Interior may prescribe to protect the rivers included in the National System, other existing mining activity would be allowed to continue. Existing mineral activity must be conducted in a manner that minimizes surface disturbance, sedimentation, and visual impairment. Reasonable access will be permitted.

f. Road Construction: No roads or other provisions for overland motorized travel would be permitted within a narrow incised river valley or, if the river valley is broad, within 1/4 mile of the river bank. A few inconspicuous roads leading to the boundary of the river area at the time of study will not disqualify wild river classification. Also, unobtrusive trail bridges could be allowed.

g. Agriculture: Agricultural use is restricted to a limited amount of domestic livestock grazing and hay production to the extent currently practiced. Row crops are prohibited.

h. Recreation Development: Major public-use areas, such as large campgrounds, interpretive centers, or administrative headquarters are located outside the wild river area. Simple comfort and convenience facilities, such as fireplaces or shelters may be provided as necessary within the river area. These should harmonize with the surroundings.

i. Structure: A few minor existing structures could be allowed assuming such structures are not incompatible with the essentially primitive and natural values of the viewshed. New structures would not be allowed, except in rare instances to achieve management objectives (i.e. structures and activities associated with fisheries enhancement programs could be allowed.)

j. Utilities: New transmission lines, gas lines, water lines, etc. are discouraged. Where no reasonable alternative exists, additional or new facilities should be restricted to existing rights-of-way. Where new rights-of-way are indicated, the scenic, recreational, and fish and wildlife values must be evaluated in the selection of the site.

k. Motorized travel: Motorized travel on land or water could be permitted, but is generally not compatible with this classification.

### SCENIC RIVERS

a. Timber Production: A wide range of silvicultural practices could be allowed provided that such practices are carried on in such a way that there is no substantial adverse effect on the river and its immediate environment. The river area should be maintained in its near natural environment. Timber outside the boundary but within the visual scene area should be managed and harvested in a manner which provides special emphasis on visual quality.

b. Water Supply: All water supply dams and major diversions are prohibited.

c. Hydroelectric Power: No development of hydroelectric power facilities would be allowed.

d. Flood Control: Flood control dams and levees would be prohibited.

e. Mining: Subject to regulations at 36 CFR 228 that the Secretaries of Agriculture and the Interior may prescribe to protect the values of rivers included in the National System, new mining claims and mineral leases could be allowed, and existing operations allowed to continue. However, mineral activity must be conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

f. Road Construction: Roads may occasionally bridge the river area and short stretches of conspicuous or longer stretches of inconspicuous and well-screened roads or screened railroads could be allowed. Consideration will be given to the type of use for which roads are constructed and the type of use that will occur in the river area.

g. Agriculture: A wider range of agricultural uses is permitted to the extent currently practiced. Row crops are not considered as an intrusion of the "largely primitive" nature of scenic corridors as long as there is not a substantial adverse effect on the natural-like appearance of the river area.

h. Recreation Development: Larger scale public use facilities, such as moderate size campgrounds, public information centers, and administrative



headquarters are allowed if such structures are screened from the river. Modest and unobtrusive marinas also can be allowed.

i. Structures: Any concentrations of habitations are limited to relatively short reaches of the river corridor. New structures that would have a direct and adverse effect on river values would not be allowed.

j. Utilities: This is the same as for wild river classifications.

k. Motorized Travel: Motorized travel on land or water may be permitted, prohibited or restricted to protect the river values.

## RECREATIONAL RIVERS

a. Timber Productions: Timber harvesting would be allowed under standard restrictions to protect the immediate river environment, water quality, scenic, fish and wildlife, and other values.

b. Water Supply: Existing low dams, diversion works, rip rap and other minor structures are allowed provided the waterway remains generally natural in appearance. New structures are prohibited.

c. Hydroelectric Power: No development of hydroelectric power facilities is allowed.

d. Flood Control: Existing flood control works may be maintained. New structures are prohibited.

e. Mining: Subject to regulations (36 CFR 228) that the Secretaries of Agriculture and the Interior may prescribe to protect values of rivers included in the National System, new mining claims and mineral leases are allowed and existing operations are allowed to continue. Mineral activity must be conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment.

f. Road Construction: Paralleling roads or railroads could be constructed on one or both river banks. There can be several bridge crossings and numerous river access points.

g. Agriculture: Lands may be managed for a full range of agriculture uses, to the extent currently practiced.

h. Recreation Development: Campgrounds and picnic areas may be established in close proximity to the river. However, recreational classification does not require extensive recreation development.

i. Structures: Small Communities as well as dispersed or cluster residential developments are allowed. New structures are allowed for both habitation and for intensive recreation use.

j. Utilities: This is the same as for wild and scenic river classifications.

k. Motorized Travel: Motorized travel on land or water may be permitted, prohibited or restricted. Controls will usually be similar to surrounding lands and waters.



# KENTUCKY REVISED STATUTES

Chapter 146  
(portions of)

KENTUCKY WILD RIVERS SYSTEM

## INFORMATIONAL COPY

February 1987



**Natural Resources and  
Environmental Protection Cabinet**

**Department for Environmental Protection  
Division of Water  
Frankfort, Kentucky**

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TITLE XII  
CONSERVATION AND STATE DEVELOPMENT

CHAPTER 146  
DEPARTMENT FOR NATURAL RESOURCES  
AND ENVIRONMENTAL PROTECTION

Wild Rivers System

146.200 Title.

KRS 146.200 to 146.360 may be cited as the Kentucky Wild Rivers Act.

146.210 Definitions used in KRS 146.210 to 146.360.

As used in KRS 146.210 to 146.360, the words listed herein shall have the following respective meanings, unless another or different meaning or intent shall be clearly indicated by the context:

(1) "Stream or watercourse" shall mean a flowing body of water or a section or portion thereof, including rivers, streams, and creeks.

(2) "Free flowing" shall mean existing or flowing in a natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway. The existence, however, of low dams, diversion works, and other minor structures at the time any stream is proposed for inclusion in the wild rivers system shall not automatically bar its consideration for such inclusion; Provided, that this shall not be construed to authorize or to be intended to encourage future construction of such structures within components of the wild rivers system.

(3) "Road" shall mean a highway, a hard-surfaced road, or an improved or unimproved dirt road. The existence, however, of unimproved roads at the time any stream is proposed for inclusion in the wild rivers system shall not automatically bar its consideration for such inclusion; Provided, that this shall not be construed to authorize or to be intended to encourage future construction of such roads where this would be contrary to the provisions of KRS 146.200 to 146.360.

(4) "Wilderness type recreation" shall mean activities such as fishing, hunting, canoeing, camping, hiking, horseback riding, exploring, archaeological and scientific investigation, and scenic and aesthetic enjoyment, which utilizes and protects to the highest degree the primitive and natural values of the area.

(5) "Visual horizon" shall mean the normal distance to which land and vegetative features can be unobstructedly viewed from the center of the stream.

(6) "Access point" shall mean an area along the stream under public ownership, or under easement acquired by agreement with a private landowner. This area would be available for public recreational use including, but not limited to, the launching of boats, picnicking and camping.

(7) "Secretary" shall mean the secretary for natural resources and environmental protection or the successor to that office.



#### 146.220 Legislative intent.

The general assembly hereby recognizes that certain streams of Kentucky possess outstanding and unique scenic, recreational, geological, fish and wildlife, botanical, historical, archaeological and other scientific, aesthetic, and cultural values. It is the policy of the general assembly to complement dam construction and development projects on Kentucky watercourses with other equally important and beneficial uses of our water resources. Therefore, it is hereby declared that in order to afford the citizens of the Commonwealth an opportunity to enjoy natural streams, to attract out-of-state visitors, to assure the well-being of our tourist industry, to preserve for future generations the beauty of certain areas untrammelled by man, it is in the interest of the Commonwealth to preserve some streams or portions thereof in their free-flowing condition because their natural, scenic, scientific, and aesthetic values outweigh their value for water development and control purposes now and in the future. For aesthetic, as well as ecological reasons, the foremost priority shall be to preserve the unique primitive character of those streams in Kentucky which still retain a large portion of their natural and scenic beauty, and to prevent future infringement on that beauty by impoundments or other man-made works. Since the stream areas are to be maintained in a natural state, they will also serve as areas for the perpetuation of Kentucky's wild fauna and flora. Few such streams remain in the Eastern portion of the United States, and the general assembly feels a strong obligation to the people of Kentucky to preserve these remnants of their proud heritage. It is the purpose of KRS 146.200 to 146.360 to establish a wild rivers system by designating certain streams for immediate inclusion in the system and by prescribing the procedures and criteria for protecting and administering the system. It is not the intent of KRS 146.200 to 146.360 to require or to authorize acquisition of all lands or interests in lands within the boundaries of the stream areas but to assure preservation of the scenic, ecological and other values and to provide proper management of the recreational, wildlife, water and other resources. It is the intent of KRS 146.200 to 146.360 to impose reasonable regulations as to the use of private and public land within the authorized boundaries of wild rivers for the general welfare of the people of the Commonwealth, and where necessary, to enable the department to acquire easements or lesser interests in or fee title to lands within the authorized boundaries of the wild rivers, so that the public trust in these unique natural rivers might be kept.

#### 146.230 Criteria for streams in wild rivers system.

Streams which substantially meet the following criteria are eligible for inclusion in the wild rivers system:

Streams or sections of streams that are essentially free-flowing, with shorelines and scenic vistas essentially primitive and unchanged, free from evidence of the works of man, and pleasing to the eye. The waters shall not be polluted beyond feasible correction and shall be kept unpolluted once corrected according to standards established by the Kentucky department for natural resources and environmental protection. The area may provide a high quality fish and wildlife habitat, containing one or more

unique or rare species for sport or observation. It may provide opportunities for scientific study or appreciation of essentially undisturbed ecological, geologic, or archaeologic conditions. It shall provide wilderness type recreation such as canoeing and hiking, or specialized uses without disturbing the primitive character of the area.

146.241 Designation of streams in wild rivers system.

The streams or segments of streams to be included in this system, being classified by KRS 146.230, are as follows:

(1) The Cumberland River from Summer Shoals to the backwater of Lake Cumberland;

(2) The Red River from the Ky. 746 bridge to the mouth of Swift Camp Creek. Nothing in KRS 146.220 to 146.360 shall be construed to prohibit that portion of the Red River between Peck's Branch and Swift Camp Creek from being used to temporarily contain flood waters that may be impounded above the normal sustained pool level of any lake which may be created in the event a dam is constructed on the Red River near Bowen, Kentucky;

(3) The Rockcastle River from the Ky. 80 bridge to the backwater of Lake Cumberland. Nothing in KRS 146.220 to 146.360 shall be construed to prohibit or interfere with the relocating of Ky. 80, including the construction of a bridge at a point approximately 2.35 miles downstream from the existing Ky. 80 bridge;

(4) The Green River from the eastern boundary of Mammoth Cave National Park extending downstream and including only that portion of the river within the Mammoth Cave National Park;

(5) The Big South Fork of the Cumberland River from the Tennessee border to Blue Herron;

(6) Martins Fork, Cumberland River from Ky. Highway 987 bridge to the eastern boundary of Cumberland Gap National Park;

(7) Rock Creek from the White Oak Junction bridge to the Kentucky-Tennessee border;

(8) Little South Fork, Cumberland River from the backwater of Lake Cumberland (mile 4.1) to the Kentucky Highway 92 bridge (mile 14.5) in Wayne and McCreary counties; and

(9) Bad Branch of Poor Fork, Cumberland River from the headwaters on Pine Mountain to the Ky. 932 bridge, including the entire watershed drained by all stream segments, except for that portion above a point 0.1 mile below the existing lake on the easternmost fork.

146.250 Boundaries of stream areas.

The secretary of the department for natural resources and environmental protection shall, by June 16, 1974, determine generally the boundaries of the stream area associated with the stream or stream segment initially included in the wild rivers system by KRS 146.200 to 146.360. Establishment of these boundaries shall be accomplished in such a way that it includes at least the visual horizon from the stream, but not more than two thousand (2,000) feet from the center of the stream. The boundary shall further include access points, at the upstream and downstream boundary of the area.



146.260 Recommendation of additional stream areas by secretary for natural resources and environmental protection -- Contents.

(1) The secretary for natural resources and environmental protection shall study and from time to time submit to the governor and to the general assembly proposals for additions to the wild rivers system of streams and sections of streams which, in his judgment, would qualify for inclusion therein. Each proposal shall be accompanied by:

(a) A detailed map showing the boundaries of the stream or sections of streams and those adjacent lands needed to protect and administer the needed controls.

(b) The category of the proposed additions in accordance with KRS 146.230.

(c) A detailed report on the factors which make the area a worthy addition to the system.

(2) The intention of this requirement is to insure that such studies will be made; it is not intended to preclude or discourage, but rather encourage similar studies and proposals by other agencies or by citizen groups working independently. Authority for additions to the wild rivers system shall remain exclusively with the Kentucky general assembly.

146.270 Administration of system by department for natural resources and environmental protection.

The wild rivers system shall be administered by the department for natural resources and environmental protection according to the policies and criteria set forth in KRS 146.200 to 146.360. The secretary for natural resources and environmental protection shall adopt such rules or regulations necessary for the preservation and enhancement of the stream areas as set forth in KRS 146.250, and for control of recreational, educational, scientific and other uses of these areas in a manner that shall not impair them. In such administration primary emphasis shall be given to protecting aesthetic, scenic, historic, archaeologic, and scientific features of the area. The secretary shall develop a management plan for a designated stream area and shall publicize and hold public hearings and record the views expressed on each plan developed. Management plans for a given stream area may establish varying degrees of intensity for its protection, based on special attributes of each area, but shall follow the concepts embodied in KRS 146.230. No public use of lands within the boundaries of a designated wild river area in which the state has acquired an interest shall be permitted prior to the development of a management plan. Any such management plan shall be developed jointly with the department of fish and wildlife resources with respect to those aspects of such plan as relate to the jurisdiction of that department over fish and wildlife resources.

146.280 Acquisition of stream areas by secretary for natural resources and environmental protection.

(1) Within the boundaries of a designated stream area, as established and authorized by the Kentucky general assembly, the secretary for natural resources and environmental protection is

authorized and empowered to acquire by purchase, exercise of the rights of eminent domain, grant, gift, devise or otherwise, the fee simple title, an easement or any acceptable lesser interest in any lands, and by lease or conveyance, contract for the right to use and occupy any lands. Where property within such boundaries is owned by the federal government, the secretary can enter into agreements with the landowning agency concerning use of the property consistent with the objectives of KRS 146.200 to 146.360. Nothing in KRS 146.200 to 146.360 shall be construed to deprive a landowner of the fee simple title to or lesser interest in his property without just compensation.

(2) The secretary for natural resources and environmental protection may not exercise authority to acquire lands or interests in lands located within any incorporated city, village, or county when such entities have in force a duly adopted, valid ordinance or plan for the management, zoning and protection of such lands in accordance with the provisions of KRS 146.200 to 146.360.

146.290 Land uses permitted in stream area.

(1) The provisions of this section shall not apply to those uses existing at such time as a stream is included in the system.

(2) Land uses to be allowed within the boundaries of a designated stream area shall be as follows:

New roads, structures or buildings may be constructed only where necessary to effect a use permitted under the other provisions of KRS 146.200 to 146.360. Utility lines or pipelines may be constructed as approved by the secretary in writing and under provision that the affected land be restored as nearly as possible to its former state. This provision, however, shall in no way affect the rights between a landowner and a utility company or pipeline company. There shall be no strip mining as defined in KRS 350.010, and select cutting of timber or other resource removal and agricultural use, may be allowed pursuant to regulations promulgated by the secretary upon the granting of a permit under the other provisions of KRS 146.200 to 146.360. All instream disturbances such as dredging, shall be prohibited. Except for the management agency and any existing uses which do not conform to the purposes and intent of KRS 146.200 to 146.360, travel upon a wild river or any public lands within the designated boundaries thereof, shall be by foot, horseback, canoe, boat or other nonmechanical modes of transportation. If there are existing agricultural areas within the boundaries of the area, such areas may continue to be used for agricultural purposes.

(3) Any landowner within the boundaries of the area may apply to the secretary for a change of use to permit the select cutting of timber, a resource removal or an agricultural use upon his property located within the area and the secretary shall hold a public hearing after public notice on the application within sixty (60) days. The landowner or any interested person shall be allowed to present evidence as to whether the proposed use by the applying landowner is in accordance with the management plan developed pursuant to KRS 146.270, the purpose and intent of the Wild Rivers Act as expressed in KRS 146.220, and other applicable law.

(4) The secretary shall, within sixty (60) days after said hearing, either:

(a) Issue an order, with accompanying opinion, denying the permit; or



(b) Issue an order, with accompanying opinion, granting the permit with such restrictions, terms and conditions as are appropriate to protect to the fullest extent possible the wild rivers area and the public trust therein within the intent of KRS 146.220; or

(c) Recommend an alternate use to which the land may be put under KRS 146.200 to 146.360 which is more consistent with the purposes and intent of KRS 146.200 to 146.360 than the use for which application was made; or

(d) Institute condemnation proceedings in the circuit court of the county in which the land is located or else negotiate a purchase of the land affected, or any interest therein.

(5) On or before thirty (30) days from the date of the secretary's ruling, the landowner may file with the department a written objection to the ruling. If, within the next sixty (60) days the landowner and the secretary are unable to reach an agreement with respect to a modification of his ruling, the secretary must either permit the use applied for, condemn the property, or petition the Franklin Circuit Court for an order restraining the proposed use. The order shall be entered immediately upon the filing of the petition and the execution of a bond without surety by the Commonwealth in an amount satisfactory to the court to indemnify the landowner against loss of profits from any wrongful restraint of the use of his property during the period from the filing of the petition until such time as the matter is concluded by the courts. The court shall review the decision as to both law and fact; but no factual finding shall be reversed unless clearly erroneous or else arbitrary, capricious, or an abuse of discretion.

#### 146.300 Determination of applicable law in conflict.

Any component of the wild rivers system that is or shall become a part of any state park, wildlife refuge, or similar state administered area shall be subject to the provisions of KRS 146.200 to 146.360 and the laws under which the other areas may be administered, and in the case of conflict between the provisions of these laws the more restrictive provisions shall apply.

#### 146.310 State agencies to notify secretary for natural resources and environmental protection of activities affecting stream areas.

All state agencies shall, promptly upon June 16, 1972, inform the secretary for natural resources and environmental protection of any proceedings, studies, or other activities within their jurisdictions, and regardless of by whom requested, which are now in progress and which affect or may affect any of the streams specified in KRS 146.241. They shall likewise inform him of any such proceedings, studies or other activities which are hereafter commenced or resumed before they are commenced or resumed.

#### 146.320 Component of wild rivers system may be included in federal system.

Nothing in KRS 146.200 to 146.360 shall preclude a component of the wild rivers system from becoming a part of the national wild and

scenic rivers system. The secretary for natural resources and environmental protection is directed to encourage and assist any federal studies for inclusion of Kentucky streams in the national wild and scenic rivers system. The secretary for natural resources and environmental protection may enter into written cooperative agreements for joint federal-state or interstate administration of a Kentucky component of the national wild and scenic rivers system, provided such agreements for the administration of water and land uses are not less restrictive than those set forth in KRS 146.200 to 146.360.

146.330 Employment of assistants.

The secretary for natural resources and environmental protection may employ such technical, clerical, stenographic and other employes and assistants as are required to effectively carry out his duties and responsibilities as provided in KRS 146.200 to 146.360.

146.340 Wild rivers system fund created.

A fund for the purpose of carrying out the provisions of KRS 146.200 to 146.360 is hereby created to be designated as a "wild rivers system fund" to consist of all revenues derived from privileges, concessions, contracts, or otherwise, all monies received by gifts, contributions, donations and grants from public or private sources. Such "wild rivers system fund" shall be disbursed by the department for natural resources and environmental protection, after appropriations are made by law for administration and other expenses and for other purposes provided by KRS 146.200 to 146.360.

146.350 Enforcement.

It shall be the duty of the department's office of general counsel, or upon the secretary's request, of the attorney general, to bring an action for the recovery of the penalties provided for in KRS 146.990 and to bring an action for a restraining order, temporary or permanent injunction, for the prevention or correction of a condition constituting or threatening to constitute a violation of KRS 146.200 to 146.360. All actions for injunctive relief for violation of KRS 146.200 to 146.360 shall be brought in the name of the Commonwealth of Kentucky by the department's office of general counsel, or upon the secretary's request, by the attorney general in the Franklin Circuit Court. If such action seeks recovery of penalties in addition to injunctive relief, it shall be brought to one of the counties through which the designated portion of the river runs.

146.360 Trespass.

Nothing in KRS 146.210 to 146.360 shall be construed to confer upon any member of the public any right to the use of or access to private lands within the boundary of a designated wild river.

146.990 Penalties.

(1) Any person, corporation, city, county or other governmental subdivision who violates any of the provisions of KRS 146.200 to 146.360 shall be liable to a civil penalty of not more than one thousand dollars (\$1,000) for said violation and in addition may be enjoined from continuing said violation. Each day upon which such violation occurs or continues shall constitute a separate offense.

(2) Any person who trespasses on private land within the boundary of a designated wild river shall be guilty of a Class B misdemeanor, and upon conviction shall be subject to a fine not to exceed five thousand dollars (\$5,000).

(3) Violations of KRS 146.410 to 146.530 or of any rule or regulation adopted and published by the commission pursuant to the provisions of KRS 146.410 to 146.530, shall be subject to the penalties and sanctions presently provided for in KRS Chapter 224 or as may be amended.

# KENTUCKY WILD RIVERS REGULATIONS

Kentucky Administrative Regulations

Title 401, Chapter 4:100- 4:140

November 1989

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**Natural Resources and  
Environmental Protection Cabinet**

Department for Environmental Protection

Division of Water

Frankfort, Kentucky

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## Chapter 4

## Water Resources

- 100. Wild River boundaries
- 110. Definitions
- 125. Wild Rivers administration
- 130. Wild Rivers change of use permit procedures
- 140. Wild Rivers change of use permit standards

## 401 KAR 4:100. Wild Rivers boundaries.

RELATES TO: KRS 146.241, 146.250

STATUTORY AUTHORITY: KRS 146.270, 224.033, 224.045

NECESSITY AND FUNCTION: KRS 146.250 directs the Secretary to determine generally the boundaries of the Wild Rivers designated in KRS 146.240. The boundaries must include at least the visual horizon of the stream but not extend more than 2,000 feet from the center of the stream. The statute further requires that the Secretary designate access points at the upper and lower boundaries of each stream. This regulation incorporates by reference maps adopted and filed with the regulation delineating the general boundaries of each stream area and specifies the access points to each area. The maps are incorporated by reference as they are too large and cumbersome for reproduction. Copies of the maps are available by request from the Division of Water, Natural Resources and Environmental Protection Cabinet, Fort Boone Plaza, 18 Reilly Road, Frankfort, Kentucky 40601.

Section 1. The boundaries of the stream area of the Cumberland River are as delineated on the map captioned "Designated Wild River Area, Cumberland River," which map is hereby adopted and incorporated herein by reference. The upper access point is the area where Ky. 204 approaches the Cumberland River below Summer Shoals and the lower access point is at Cumberland Falls State Park.

Section 2. The boundaries of the stream area of the Red River are as delineated on the map captioned "Designated Wild River Area, Red River," which map is hereby adopted and incorporated herein by reference. The upper access point is the area where Ky. 746 crosses the Red River and the lower access point is the area where Ky. 715 crosses the river.

Section 3. The boundaries of the stream area of the Rockcastle River are as delineated on the map captioned "Designated Wild River Area, Rockcastle River," which map is hereby adopted and incorporated herein by reference. The upper access point is the area where Ky. 80 crosses the Rockcastle River and the lower access point is the area where Ky. 192 crosses the river.

Section 4. The boundaries of the stream area of the Green River are as delineated on the map captioned "Designated Wild River Area, Green River," which map is hereby adopted and incorporated herein by reference. The upper

access point is the area where Dennison Ferry Road meets the Green River and the lower access point is the area of Lock No. 6 on the Green River.

Section 5. The boundaries of the stream area of the Big South Fork of the Cumberland River are as delineated on the map captioned, "Designated Wild River Area, Big South Fork, Cumberland River," which map is hereby adopted and incorporated herein by reference. The upper access point is the area where Difficulty Creek joins the Big South Fork and the lower access point is the area where the Blue Heron Road ends.

Section 6. The boundaries of the stream area of Martins Fork of the Cumberland River are as delineated on the map captioned "Designated Wild River Area, Martins Fork, Cumberland River," which map is hereby adopted and incorporated herein by reference. The upper access point is the area where Martins Fork flows from the Cumberland Gap National Historical Park and the lower access point is the area where Ky. 987 crosses the mouth of Laurel Branch Creek.

Section 7. The boundaries of the stream area of Rock Creek are as delineated on the map captioned "Designated Wild River Area, Rock Creek," which map is hereby adopted and incorporated herein by reference. The upper access point is the area where the Rock Creek Bell Farm Road crosses Big Branch. The lower access point is at the White Oak Junction Bridge.

Section 8. The boundaries of the Little South Fork of the Cumberland River are as delineated on the map captioned "Designated Wild River Area, Little South Fork, Cumberland River," which map is hereby adopted and incorporated herein by reference. The upper access point is the area where the East Coopersville Road fords the Little South Fork and the lower access point is the area where the Lower Morrow Hollow Road crosses the Little South Fork.

Section 9. The boundaries of the stream area of Bad Branch are as delineated on the map captioned "Designated Wild River, Bad Branch," which map is hereby adopted and incorporated herein by reference. The upper access point is the headwaters on Pine Mountain and the lower access point is the area where Ky. 932 crosses Bad Branch. (Recodified from 400 KAR 1:010, 6-25-85; Am. 15 Ky.R. 281; 991; eff. 10-26-88.)

## 401 KAR 4:110. Definitions for 401 KAR 4:120 to 4:140.

RELATES TO: KRS 146.220, 146.241, 146.250, 146.260, 146.270, 146.290, 146.310, 146.350, 146.360

STATUTORY AUTHORITY: KRS 146.270, 224.033, 224.045

NECESSITY AND FUNCTION: KRS 146.270 authorizes the secretary to adopt rules and regulations necessary for the preservation and enhancement of wild rivers as set forth in KRS 146.250, and for control of recreational, educational, scientific and other uses of these areas in a manner that shall not impair them. Emphasis shall be given to protecting aesthetic, scenic, ecological, historic, archaeological and scientific features of the areas. This

regulation defines certain essential terms used in the wild rivers regulations, 401 KAR.4:120 to 4:140, which are not clearly defined by their context. Terms not defined below have the meaning given to them in relevant statutes or, if not defined in statutes, the meaning attributed by common use.

Section 1. (1) "Access road" means that access constructed or improved to connect a permitted use within a wild river corridor to a public road system.

(2) "Acid-forming substance" means an earth substance that contains sulfide minerals or other materials which, if exposed to air, water, or weathering processes, forms acids that may create acid water.

(3) "Acid water" means drainage with a pH of less than six (6.0) in which total acidity exceeds total alkalinity.

(4) "Adverse impact" means having a damaging, degrading or destructive effect on a resource.

(5) "Agricultural use" means the use of land for agricultural purposes including, but not limited to farming, dairying, pasturage, apiaries, horticulture, floriculture, viticulture, and animal and poultry husbandry.

(6) "Applicant" means the landowner who applies for a change of use permit to allow a change of land use within a wild river corridor.

(7) "Best management practices" means methods, measures or practices to prevent or reduce water pollution, including, but not limited to, structural and nonstructural controls, and operation and maintenance procedures which may be applied before, during or after pollution-producing activities to reduce or eliminate the introduction of pollutants into waterbodies.

(8) "Buffer zone" means an area of natural vegetation having a minimum width of not less than 100 feet, which is retained along each bank of a wild river to maintain aesthetics, bank stability, appropriate water temperatures, fish and wildlife habitat, and stream hydraulics, and to filter debris and water-borne pollutants from surface runoff.

(9) "Cabinet" means the Natural Resources and Environmental Protection Cabinet.

(10) "Change of use permit" means a permit issued to a landowner by the secretary to authorize a change of land use within a wild river corridor.

(11) "Commercial service" means the use of a wild river corridor for monetary profit, including, but not limited to, concessions, boat rentals, shuttle services, guided trips or tours, commercial boat docks, wharves and other recreational facilities.

(12) "Conforming land use" means a land or resource use which conforms to the provisions and intent of the Kentucky Wild River Act and the management plan developed pursuant to KRS 146.270 for a given wild river corridor.

(13) "Cultural character" means the condition, composition, and/or appearance of an archaeological or historical feature which contributes to its outstanding, unique or otherwise significant value.

(14) "Disturbed area" means an area having a manmade surface disturbance.

(15) "Division" means the Division of Water.

(16) "Existing use" means a land use which is in existence at the time a wild river is designated by the Kentucky General Assembly.

(17) "Floodplain" means the area in a watershed that is subject to flooding at least one (1) time in every 100 years.

(18) "Kentucky Wild Rivers Act" means KRS 146.200 to 146.360, as amended.

(19) "Landowner" means the owner of a property or an interest in a property conveyed by lease or other legal conveyance.

(20) "Land use plan" means a plan of action submitted to the cabinet as part of a change of use permit application.

(21) "Log landing" means a collecting point for holding cut timber.

(22) "Management plan" means the individual plan adopted by the cabinet pursuant to KRS 146.270 as the official document guiding the management and protection of a given wild river corridor.

(23) "Natural character" means the condition or appearance of an area or resources which may be expected to exist in nature undisturbed by human actions.

(24) "Natural vegetation" means the species, or combinations of species, of plants which exist, or may be expected to exist, in nature undisturbed by human actions.

(25) "New land use" means a land use within a wild river corridor which is not in existence at the time a given wild river corridor is designated by the Kentucky General Assembly.

(26) "Operator" means the person, partnership, contractor, subcontractor, company or corporation responsible for the construction, maintenance, operation and reclamation of a permitted use.

(27) "Permitted use" means a nonconforming land use within a wild river corridor which has been authorized by the secretary through the issuance of a change of use permit.

(28) "Permittee" means a landowner who has obtained a change of use permit from the cabinet.

(29) "Produced water" means water and pollutants and combination thereof resulting, obtained or produced from the exploration, drilling or production of oil or gas.

(30) "Professional forester" means a person holding a degree in forestry from a school with an accredited forestry program.

(31) "Research plan" means a plan of action submitted to the cabinet for approval prior to initiating a scientific study within a given wild river corridor.

(32) "Resource removal" means exploration for, extraction or removal of a natural resource including, but not limited to, coal, oil and gas, minerals, rock, gravel, sand and soil.

(33) "Secretary" means the Secretary of the Natural Resources and Environmental Protection Cabinet.

(34) "Selective cutting (of timber)" means the selective removal during one (1) entry of single trees from an area such that a specified minimum residual stocking level is retained and evenly distributed over the harvest area. The purpose of the cut is to create or maintain an uneven-aged stand of timber.

(35) "Significant feature" means an outstanding, unique, rare or otherwise significant aesthetic, scenic, botanical, zoological, geological, historical, archaeological, scientific or recreational feature which is identified in the management plan or by the management agency as occurring within a given wild river corridor.

(36) "Slide" means to transport logs by sliding



or dragging along the ground.

(37) "Skid trail" means a trail developed for the purpose of skidding logs from the stump to a log landing area.

(38) "Slash" means the residue left after the economically usable portion of cut trees is removed from a harvest area.

(39) "Structure" means an above-ground object constructed, built or installed for a change of use, and shall exclude sediment ponds, roads and signs.

(40) "Surface disturbance" means any disturbance of the ground surface which involves the clearing of vegetation or excavation of soil, rock or other materials occurring on or near the ground surface.

(41) "Surface mining" means the breaking of the surface soil in order to facilitate or accomplish the extraction or removal of minerals, ores, or other solid matter; any activity or process constituting all or part of a process for the extraction or removal of minerals, ores, or other solid matter so as to make them suitable for commercial, industrial, construction, or other use; but shall not include those aspects of deep mining not having significant effect on the surface, and shall not include excavation or grading when conducted solely in aid of on-site farming or construction.

(42) "Toxin-forming substance" means earth materials or wastes which, if exposed to air, water, weathering, or microbiological processes, are likely to produce conditions that are detrimental to biota or uses of water.

(43) "Underground mining" means those aspects of deep mining, including surface effects, involving any open pit or any underground workings from which minerals, ores or other solid matter is removed for sale, exchange, commercial, or other use, and all shafts, drifts, or inclines leading thereto, including all buildings and equipment, above or below the surface of the ground, used in connection with such workings.

(44) "Visual intrusion" means resulting in the disruption, degradation or impairment of the natural or primitive appearance of an area in a wild river corridor, as viewed from the river or other designated public use area, and includes any land use that does not remain visually subordinate to the characteristic landscape.

(45) "Watershed" means that area enclosed by a topographic divide from which direct surface run-off from precipitation normally drains by gravity into the stream above a specified point.

(46) "Wild river" or "wild river corridor" means a stream segment and adjacent shoreland within boundaries set forth in 401 KAR 4:100 which are designated in accordance with KRS 146.241.

(47) "Wild rivers system" means the collective wild rivers as designated in KRS 146.241 and amendments. (15 Ky.R. 693; Am. 991; eff. 10-26-88.)

401 KAR 4:125. Wild rivers administration.

RELATES TO: KRS 146.220, 146.270, 146.290, 146.310, 146.350, 224.045, 224.083, 224.085, 224.281

STATUTORY AUTHORITY: KRS 146.270, 224.033, 224.045

NECESSITY AND FUNCTION: KRS 146.270 authorizes the secretary to adopt rules and regulations

necessary for the preservation and enhancement of wild rivers as set forth in KRS 146.250, and for control of recreational, educational, scientific and other uses of these areas in a manner that shall not impair them. KRS 146.220 places emphasis on protecting the aesthetic, scenic, historical, archaeological, ecological and scientific features of these areas. This regulation sets forth guidelines for the administration, management and public use of wild river corridors, including criteria for delineating existing, conforming, permitted and prohibited land uses and conditions of authorization for utility right-of-way construction. This regulation shall apply to all lands and waters under state jurisdiction which are located within designated wild river boundaries as set forth in 401 KAR 4:100. Nothing herein shall be construed as superseding any requirements of other cabinet programs or of other state or federal agencies. This regulation contains the substance of and repeals 401 KAR 4:120.

Section 1. Definitions. As used in this chapter, unless context otherwise requires:

(1) "Agricultural use" means the use of land for agricultural purposes including, but not limited to farming, dairying, pasture, apiaries, horticulture, floriculture, viticulture, and animal and poultry husbandry; provided that fruit, vegetable and flower production for personal consumption shall not be deemed an agricultural use.

(2) "Buffer zone" means an area of woodland having a minimum width of not less than 100 feet which is retained along each bank of a wild river to maintain aesthetics, bank stability, appropriate water temperatures, fish and wildlife habitat, and stream hydraulics, and to filter debris and water-borne pollutants from surface runoff.

(3) "Cabinet" means the Natural Resources and Environmental Protection Cabinet.

(4) "Change of use permit" means a permit issued to a landowner by the secretary to authorize a change of land use within a wild river corridor.

(5) "Commercial service" means the use of a wild river corridor for monetary profit, including, but not limited to, concessions, boat rentals, shuttle services, guided trips or tours, commercial boat docks, wharves and other recreational facilities.

(6) "Conforming use" means a land or resource use which conforms to the provisions and intent of the Kentucky Wild Rivers Act and the management plan developed pursuant to KRS 146.270 for a given wild river corridor.

(7) "Existing use" means a land use which is in existence at the time a wild river is designated by the Kentucky General Assembly.

(8) "Floodplain" means the area in a watershed that is subject to flooding at least one (1) time in every 100 years.

(9) "Management plan" means the individual plan adopted by the cabinet pursuant to KRS 146.270 as the official document guiding the management and protection of a given wild river corridor.

(10) "Permitted use" means a nonconforming land use within a wild river corridor which has been authorized by the secretary through the issuance of a change of use permit.

(11) "Research plan" means a plan of action

submitted to the cabinet for approval prior to initiating a scientific study within a given wild river corridor.

(12) "Resource removal" means exploration for, extraction or removal of a natural resource including, but not limited to, coal, oil and gas, minerals, rock, gravel, sand and soil.

(13) "Secretary" means the Secretary of the Natural Resources and Environmental Protection Cabinet.

(14) "Selective cutting (of timber)" means the selective removal during one entry of trees from an area such that a specified minimum residual stocking level is retained and evenly distributed over the harvest area. A selective cut creates or maintains an uneven-aged stand of timber.

(15) "Structure" means an above-ground object constructed, built or installed for a change of use, and shall exclude sediment ponds, roads and signs.

(16) "Visual intrusion" means resulting in the disruption, degradation or impairment of the natural or primitive appearance of an area in a wild river corridor, as viewed from the river or other designated public use area, and includes any land use that does not remain visually subordinate to the characteristic landscape.

(17) "Wild river" or "Wild river corridor" means a stream segment and adjacent shoreland within boundaries set forth in 401 KAR 4:100 which are designated in accordance with KRS 146.241.

Section 2. General Policy. (1) Wild rivers shall be managed to preserve their free-flowing condition and to protect the outstanding and unique aesthetic, scenic, recreational, fish and wildlife, botanical, historical, archeological and other natural and cultural features which qualified the streams for designation as wild rivers.

(2) Additional management objectives shall be to afford opportunities to enjoy natural streams and to preserve for future generations the beauty of certain areas untrammelled by man. The cabinet will not encourage public use of areas where it has been determined that the carrying capacity for one (1) or more uses has been reached or exceeded.

Section 3. Management Plans. (1) The management of a given wild river corridor shall be according to a management plan developed by the cabinet.

(2) The cabinet shall consult with landowners in the affected wild river corridor, citizen groups, industries and appropriate local, state and federal agencies in the preparation of each management plan.

(3) Public participation in the development of a management plan shall be provisioned by at least one (1) public hearing on the draft management plan followed by a thirty (30) day comment period prior to finalizing the plan.

(4)(a) The hearing, or hearings, shall be conducted in one (1) of the counties through which the designated portion of the river flows;

(b) Notice of hearing shall be given in accordance with the provisions of KRS Chapter 424. The notice shall:

1. State the time, place and purpose of the hearing;

2. State the name and address of the person from whom a copy of the proposed management plan

may be attained;

3. Be published not less than seven (7) nor more than twenty-one (21) days prior to the hearing;

4. Be published in the county, or counties, through which the designated portion of the river flows, and in at least one (1) major newspaper; and

5. Set forth the address to which written comments on the draft management plan may be submitted, and the date by which those written comments shall be submitted.

(c) The hearing shall be conducted by a designated representative of the cabinet who shall control the order of presentation;

(d) Any interested person may appear at the hearing and make an oral or written presentation concerning the draft management plan. All oral presentations shall be recorded; and

(e) All written and oral comments shall be considered in the development of the management plan.

(5) Responsibility for the administration and management of a wild river shall be clearly delineated in the management plan for that river, and any management agreements between the cabinet and local, state or federal agencies having overlapping jurisdiction over lands or waters within the wild river corridor shall be incorporated into the plan.

Section 4. Existing or Conforming Land Uses. (1) Under the provisions of KRS 146.290, land uses which are lawfully existing at the time the boundaries of a wild river are designated may continue even though the use does not conform to the purpose and intent of the Kentucky Wild Rivers Act or the management plan for a given wild river.

(2) Other than existing uses, land uses within wild river corridors which conform to the purposes and intent of the Kentucky Wild Rivers Act and the duly adopted management plan for each wild river shall not require a change of use permit.

(3) Conforming uses shall include wilderness type recreation such as nonmechanized boating, hiking, hunting, fishing, camping, sightseeing and horseback riding, as well as scientific research, environmental education and related activities which preserve the primitive character and natural and cultural resources of the area.

(4) Other land uses shall qualify as conforming uses if they do not involve the clearing of more than one-half (1/2) acre of timber, nor constitute a significant visual intrusion within 100 feet of the river. Conforming uses may include the following:

(a) The routine maintenance, repair, renovation or replacement of existing roads, buildings or other structures or improvements to an existing use;

(b) The selective cutting of firewood or individual trees by a landowner for personal or family use;

(c) Landscaping and gardening, including flower, fruit and vegetable production;

(d) Fencing;

(e) The removal of noxious weeds from an area using direct application but not aerial spraying, and herbicides that are short-term, nontoxic to fish and wildlife and will not leach into surface waters or groundwater; and

(f) The clearing of diseased or insect-



infested trees from an area greater than one-half (1/2) acre upon written authorization from the cabinet based on the recommendation of a professional forester.

Section 5. Permitted Land Uses. (1) Land use changes authorized by the cabinet through a change of use permit as required under KRS 146.290, shall comply with all applicable standards set forth in 401 KAR 4:140;

(2) Land use changes which require a change of use permit shall include:

(a) A resource removal, by methods other than surface mining;

(b) The selective cutting of timber as defined in Section 1 of this regulation; and

(c) A new agricultural use that requires clearing of timber from an area greater than one-half (1/2) acre or more in extent.

Section 6. Prohibited Land Uses. (1) Pursuant to KRS 146.290, surface mining, timber harvest by methods other than selective cutting and in-stream disturbances are prohibited within a wild river corridor;

(2) Prohibited in-stream disturbances shall include but not be limited to, dam construction, dredging, spoil or fill deposition, channel diversion, channelization and mining of streambed materials; and

(3) The construction of roads, buildings or other structures to effect any use other than an existing or permitted land use, as set forth in Section 4 or Section 5 of this regulation, is prohibited.

Section 7. Public Use. (1) Public use of wild river corridors shall be limited to the public waters and public lands or interests in lands acquired through lease, easement or other agreement entered into by the landowner. Public use of private property shall require permission from the landowner. Trespassing is subject to penalty as set forth in KRS 146.990. This section applies to the public use of state-owned lands and public waters within wild river corridors.

(2) The cabinet will make every effort to inform the public that the wild river designation does not authorize public use of privately-owned lands, and will prepare maps delineating the boundaries of public lands within wild river corridors to reduce unintentional trespassing.

(3) In accordance with KRS 146.290, transportation shall be by foot, canoe, kayak, boat, with or without electric motor, horseback or other nonmechanized means except on existing public roads, as required for administrative and resource protection purposes, or as necessary to effect an existing or permitted land use.

(4) The cabinet may condition or deny public access to a wild river if such use is causing substantial adverse impact on the scenic, aesthetic, natural, cultural, scientific or recreational resources, if private property is being damaged, or if user safety is being jeopardized.

(5) Cultural artifacts, relics, fossils and souvenirs shall not be removed from their site of discovery in a wild river corridor. Deliberate damage to plants, animals, artifacts or other special features is prohibited. A written request shall be submitted to and approved by the division prior to the collection

of any natural or cultural materials.

(6) Burying, dumping or depositing litter, soil, garbage, waste, scrap or other unsightly or offensive materials other than in receptacles provided for this purpose is prohibited.

(7) Horseback riding shall be allowed only on trails specifically designated for this use.

(8) Overnight camping and campfires shall be prohibited within thirty (30) feet of a wild river. No open fire shall be left unattended, and all fires shall be completely extinguished after use. Live vegetation shall not be cut for firewood.

(9) Camping within a state park shall be in accordance with 304 KAR 1:040.

(10) Hunting, fishing and trapping shall be subject to state and federal fish and wildlife laws and regulations, and shall comply with the following conditions:

(a) The construction of permanent shelters, lean-tos or other buildings is prohibited. Temporary blinds, stands or other structures shall be erected in a manner that will prevent injury to trees; and

(b) Trapping is prohibited within fifty (50) feet of designated boat access sites, boat portage trails and other designated public hiking trails, picnic areas and campgrounds.

(11) Carrying or discharging a firearm, bow and arrow or explosive substances shall be prohibited for any purpose other than hunting in accordance with state wildlife laws and the other provisions of this regulation.

(12) Swimming and other in-stream recreational uses of a wild river shall be in accordance with Division of Water Patrol safety standards (402 KAR 4:080 and 4:130). Entering a wild river from the shores of a state park for swimming, bathing or other in-stream recreational use shall be allowed only in areas designated as swimming areas by the Department of Parks.

(13) Conduct which disturbs the peace or causes property damage within a corridor is prohibited.

(14) Public users of wild rivers are encouraged to leave in passing no mark upon the land that might diminish its value to another, and to make every effort to protect and enhance the unspoiled beauty of these areas as components of Kentucky's unique heritage.

Section 8. Enhancement of Recreational Opportunities. (1) The development of public access to a wild river will be compatible with the purposes and intent of KRS 146.200 to 146.360 and the duly adopted management plan for a given river, and shall conform to the natural character of the area.

(2) Development of public access may be used to enhance dispersed, nonmechanized recreational opportunities and provide information on safety, orientation, rules and regulations and interpretation of special features in the area.

(3) Trails constructed within a wild river corridor will be designed and maintained to provide for nonmechanized recreational uses and to prevent soil erosion and compaction, trampling of vegetation, and other damage to the natural beauty and resources of the area.

(4) There shall be no cutting or removal of natural vegetation, living or dead, to create scenic vistas, except as expressly provided by law.

Section 9. Commercial Uses. (1) The operator of a new commercial service within a wild river corridor shall submit written notification to the cabinet not less than thirty (30) days prior to commencing such use.

(2) The construction of access roads, ramps, wharves or boat docks, buildings or other facilities required to effect a commercial use shall be located outside of a wild river corridor unless authorized by a change of use permit.

(3) The operator of a commercial service on a wild river shall comply with all applicable provisions of this regulation, and shall be responsible for ensuring that the commercial use does not impair or contribute to an adverse impact on the aesthetic, scenic, ecological, scientific, recreational or other significant features in the corridor as identified in the management plan or by the cabinet, or cause substantial damage to soils, vegetation, fish and wildlife or water quality.

(4) The cabinet may condition or deny commercial use of a wild river, as provided in Section 7(4) of this regulation.

(5) In accordance with 304 KAR 1:030, operation of a commercial activity within a state park requires prior written consent from the Department of Parks.

(6) Commercial harvest of mussels by any method is prohibited in areas where mussel species considered endangered or threatened by the Kentucky Academy of Science are known to occur.

Section 10. Scientific Study. (1) A research plan shall be submitted to the cabinet for approval prior to the commencement of any scientific study that may affect a wild river corridor.

(2) A research plan submitted to the cabinet on a form supplied by the cabinet shall contain the following information:

(a) The name, address, telephone number, professional affiliations and qualifications of the principal investigator;

(b) A U.S. geological survey 7.5 minute topographic map delineating the location and extent of the study area;

(c) The estimated dates of initiation and completion of the study;

(d) The objectives, methods and significance of the study and a statement as to the necessity or advantages of conducting the study within the wild river corridor;

(e) Plant or animal species or any special features which may be affected by the study, and the type and extent of any such effects; and

(f) A list of any plants, animals or other resources or materials to be collected, the estimated quantity to be collected, and the permit numbers of collection permits obtained from state and federal agencies.

Section 11. Utility Right-of-way Construction.

(1) As set forth in KRS 146.290, the construction of a transmission line or pipeline right-of-way within any portion of a wild river corridor shall require written approval from the secretary prior to the initiation of any construction activities within the wild river boundaries.

(2) Authorization to construct a right-of-way shall require application by the owner of the utility or pipeline company or their engineering

representatives, on an application form supplied by the cabinet. The application shall include a land use plan containing the following information:

(a) A U.S. geological survey topographic map to scale not greater than one (1) inch equal to 500 feet, showing the precise route and dimensions of the right-of-way;

(b) The estimated dates for initiation and completion of construction and the name, address and telephone number of the person or persons in charge of the construction;

(c) A detailed description of the methods of construction and specifications, including profile sheets bearing the seal and signature of a registered professional engineer;

(d) A statement of possible alternate routes for the right-of-way and why the proposed route was selected;

(e) A detailed reclamation plan designed to return the disturbed area as nearly as possible to its former appearance and condition, including the use of native species to revegetate disturbed areas; and

(f) A detailed description of proposed methods for maintaining the right-of-way, including the brand names and methods of application of any herbicides to be used.

(3) Upon receipt of an application, an inspection of the proposed construction site will be made by cabinet personnel with the property owner and applicant or their representatives, and personnel from appropriate state and federal agencies.

(4) The secretary shall notify the applicant as to whether the application is approved or denied within sixty (60) days following receipt of the application, and will state the reasons for the decision.

(5) If an application is denied, the applicant may submit a revised application to adequately address the reasons for denial stated in the secretary's written decision.

(6) An application will be approved only if there is no possible alternative route for the right-of-way that would bypass or cause less impact to the wild river corridor, and the applicant agrees to restore all disturbed area within the wild river corridor as nearly as possible to its former appearance and condition, as required under KRS 146.290.

(7) Authorization to construct a right-of-way shall contain, but not be limited to, the following conditions:

(a) Wherever feasible, the right-of-way shall be routed to avoid steep slopes, erodible soils, surface waters and areas with high water tables, public recreation areas, and other significant natural and cultural areas identified by the cabinet, and shall be the minimum width necessary for construction and maintenance;

(b) Adequate measures shall be taken to control sediment and any hazardous substances, and to minimize the visual impact of the right-of-way when viewed from the wild river or other designated public use areas;

(c) Any timber cutting required shall be according to the provisions of 401 KAR 4:140, Sections 4 through 7, and 9 through 14 and Section 17(10) through (21);

(d) Every effort shall be made to minimize disturbance to the streambed, stream banks and fish and wildlife habitat during construction activities, and to keep timber slash and other debris out of surface waters and the immediate



floodplain;

(e) Stream crossings by equipment or vehicles in a wild river corridor shall require the use of a temporary bridge or other methods approved by the cabinet and be designed so as not to impede stream flow. Construction across surface waters shall occur when local fish and wildlife are not spawning or nesting;

(f) Vehicles and equipment shall be stored outside of the wild river corridor when not in use;

(g) Aerial spraying of herbicides shall not be permitted within the boundaries of a wild river. Direct application of herbicides at ground level shall be limited to brands that are nontoxic to fish and wildlife;

(h) Pipeline relief valves shall be located outside of the wild river corridors;

(i) Primary consideration shall be given to underground placement of transmission lines and pipelines. Overhead transmission lines and towers shall be in accordance with environmental guidelines required by the Rural Electrification Authority, and shall be designed so as to prevent electrocution or other injury to wildlife;

(j) Reclamation shall consist of establishing a permanent vegetative cover on all disturbed surfaces, planting native trees or shrubs where necessary to establish a buffer zone along the banks of the wild river, implementing measures to prevent access by off-road vehicles, and removing all evidence of construction activities;

(k) A performance bond, in an amount to be determined by the cabinet, shall be required for reclamation if the cabinet determines that the proposed construction may potentially damage, degrade or otherwise have an adverse impact on any significant feature known to occur within the wild river corridor.

(l) The applicant shall provide written notice to the cabinet upon completion of reclamation, and cabinet personnel will inspect the construction site to verify compliance with all permit conditions before the bond is released.

Section 12. Road Construction. (1) In accordance with KRS 146.290, new permanent roads shall not be constructed within a wild river corridor except as authorized by the secretary to enhance recreational opportunities or to protect soil, water or other natural resources.

(2) Temporary roads shall be constructed within a wild river corridor only as necessary to effect a use authorized by a change of use permit, and shall be closed and reclaimed immediately after the permitted land use is concluded.

(3) Any construction required to improve, repair or replace existing state or county-maintained roads or bridges shall require full environmental review by the division and other appropriate state natural resource agencies prior to any construction activity.

(4) During authorized construction activities, no heavy equipment shall be driven through or into a wild river unless every feasible precaution has been taken by the operator to prevent damage to streambank vegetation, protect fish and wildlife habitat, control soil erosion and prevent stream sedimentation.

(5) When recommended by the secretary, design plans for improving or replacing a bridge across a wild river shall consider provisions for enhancing public access to the river for

recreational uses consistent with the provisions of KRS 146.200 to 146.360.

Section 13. Agency Notification. (1) State or local government agencies which engage in or regulate any activity within the watershed of a wild river shall notify the cabinet prior to the initiation of any activity which may adversely affect the river, and shall provide the cabinet an opportunity to review proposals and plans for the new activity.

(2) A change of land use on state-owned lands within a wild river corridor that does not conform with the purpose and intent of KRS 146.200 to 146.360 shall require that the state agency that owns the affected land obtain a change of use permit from the cabinet.

Section 14. Fire Control. (1) State fire control provisions of KRS Chapter 149, and any which may be established by cooperative agreement, shall be strictly enforced.

(2) Fire shall be controlled by methods that require the least disturbance to soils and vegetation, and use of heavy equipment shall be limited to situations where an eminent threat to life or personal property exists. Any fire hazard reduction or replanting after fire shall be coordinated with the division.

Section 15. Signs. (1) The posting of commercial signs, advertisements, announcements, campaign slogans or other written messages other than those related to permitted uses shall be prohibited.

(2) As otherwise allowed by law, signs may be installed by the management agency, local government, landowner or public utility for the purpose of public safety, posting of property boundaries or property protection, identification of river corridor boundaries and public access points or as otherwise deemed necessary for resource protection, interpretation or regulatory purposes.

(3) Signs shall be of a design and construction conforming to the natural setting in which they are located, and shall not exceed sixteen (16) square feet in size.

(4) Any person with the permission of the landowner may post informational and directional signs within a corridor as are necessary to the continuance of an existing use.

Section 16. Enforcement and Hearings. (1) Whenever the cabinet has reason to believe a violation of 401 KAR Chapter 4 has occurred, a notice of violation shall be issued.

(2) The provisions of KRS 224.081 shall apply to any cabinet order or determination made pursuant to the provisions of 401 KAR Chapter 4.

(3) Hearings required to be conducted due to the issuance of a notice of violation issued pursuant to subsection (1) or the filing of a petition pursuant to subsection (2) of this section shall be conducted pursuant to KRS 224.083.

(4) Appeals may be taken from any final order of the cabinet pursuant to KRS 224.085.

(5) Violations of the provisions of 401 KAR Chapter 4 shall be liable to the civil penalty set forth in KRS 146.990(1).

(6) Orders for remedial action and recovery of penalties will be sought pursuant to KRS 146.350.

Section 17. Severability. In the event that any provision of KRS 146.200 to 146.360 or any regulation promulgated pursuant hereto is found to be invalid by a court of competent jurisdiction, the remaining wild rivers regulations shall not be affected or diminished thereby. (16 Ky.R. 503; Am. 1336; eff. 11-22-89.)

401 KAR 4:130. Wild rivers change of use permit procedures.

RELATES TO: KRS 146.220, 146.270, 146.290, 146.990

STATUTORY AUTHORITY: KRS 146.270, 224.033, 224.045

NECESSITY AND FUNCTION: KRS 146.270 authorizes the secretary to adopt rules and regulations necessary for the preservation and enhancement of wild rivers as set forth in KRS 146.250, and for control of recreational, educational, scientific and other uses of these areas in a manner that shall not impair them. In such administration, primary emphasis shall be given to protecting aesthetic, ecological, scenic, historic, archaeological and scientific features of the area. Under the provisions of KRS 146.290, the select cutting of timber, a resource removal or an agricultural use may be allowed pursuant to regulations promulgated by the secretary upon the granting of a permit under the other provisions of KRS 146.200 to 146.360; uses which exist at the time the boundaries of a wild river are designated are exempt from this provision. KRS 146.290 requires that any permit granted to conduct a change of use shall contain such restrictions, terms and conditions as are appropriate to protect to the fullest extent possible the stream area and the public trust therein, within the intent of KRS 146.220. This regulation establishes the procedure by which a landowner, as defined in 401 KAR 4:110, may apply to the secretary for a change of use permit to conduct a new land use within a wild river corridor.

Section 1. Applicability. In accordance with KRS 146.290, a new land use activity on state-owned or private lands shall not be undertaken within a wild river corridor until the landowner has obtained a change of use permit from the cabinet. This regulation applies to any landowner applying for a permit to change a land use within a wild river corridor. Nothing herein shall be construed as superseding any requirements of other cabinet programs or of other state or federal agencies.

Section 2. Permit Application. (1) A landowner desiring to commence the select cutting of timber, a resource removal or a new agricultural use on his or her property located within a wild river corridor shall apply to the secretary for a change of use permit on an application form supplied by the cabinet.

(2) The application shall include the name, address and telephone number of the landowner and the operator of the new land use.

(3) The application for removal of a subterranean resource shall include the names and addresses of all applicable surface owners. The applicant shall notify all applicable surface owners at the time application is made for a change of use.

(4) The application shall include a land use

plan to consist of:

(a) A U.S. Geological Survey 7.5 minute topographic map which delineates the exact location and extent of the new use and any access roads being constructed or improved to effect the new use, in relation to all surface waters within the wild river corridor.

(b) The estimated dates of initiation and completion of the new use, where applicable.

(c) An estimate of the total acreage of the new use.

(d) A description of the methods for conducting the new land use including, but not limited to, any construction, excavation, blasting or tree cutting activities.

(e) A description of best management practices for controlling soil erosion and stream sedimentation, maintaining existing water quality, handling of wastes, hazardous substances and excess rock and earth, and preventing and controlling spills and accidents.

(f) A list of herbicides, pesticides, and other chemical products to be used and the planned methods of application and control.

(g) A description of reasonable alternate locations or routes for the land use and why the proposed site was chosen.

(h) A reclamation plan and time schedule which describes procedures for revegetating the affected land, types and locations of plant species to be used, and other measures required under 401 KAR 4:140, Section 14.

(5) The land use plan for underground mining shall include the following additional information:

(a) A second topographic map to scale not greater than one (1) inch equal to 500 feet, prepared, certified and registered by a professional engineer in accordance with the provisions of KRS Chapter 322, which shall delineate control of all surface and groundwater drainage on the site.

(b) Specific provisions for preventing water from entering the mine and for preventing discharges from the mine during and after the mining activity.

(c) A preblasting report, signed by a professional engineer, of the potential for damage from blasting to stream hydrology, including groundwater and subsurface drainage effects, historic structures, significant geologic formations or other significant features located within a wild river corridor.

(d) A dust control plan for the mining area.

(e) Evidence that the operation will not produce or discharge acid water or acid-forming materials.

(f) A copy of the subsidence control plan.

(6) The land use plan for oil and gas production shall include a spill prevention and control countermeasure plan to prevent and control accidental discharges of hazardous substances into surface and groundwaters.

(7) The land use plan for select cutting of timber shall contain the following additional information:

(a) A logging plan or other description of the planned cutting method and procedures for transporting logs and disposing of slash.

(b) The precise location and size of the log landing area(s) and the routing of haul roads.

(c) A timber marking report conducted and signed by a professional forester, indicating species composition, number of trees of each species, total volume and average volume per



tree for each species, number of cull trees, and a description of the method used to mark the trees.

(d) A forest management plan developed by a professional forester may be submitted as part of the land use plan to waive the requirement of 401 KAR 4:140, Section 17(5) if it employs the selective method of cutting trees and is otherwise compatible with the purpose and intent of KRS 146.200 to 146.360.

(8) The land use plan for an agricultural use involving livestock or poultry production shall describe a system for storing and disposing of animal wastes and for excluding livestock from buffer zones.

(9) The land use plan for the construction and operation of a public access facility, boat dock, ramp or other recreational facility shall include the following additional information:

(a) Design plans, signed by a registered engineer, showing the layout of all planned facilities, including roads, parking areas, trails and buildings.

(b) Evidence that any structures which would extend into the water will not substantially impede natural stream flow.

(c) A list of all permits applied for to conduct the new land use, a required under KRS Chapter 151 and other applicable state and federal laws.

(d) A waste control and disposal plan, if applicable.

Section 3. Inspection. Within thirty (30) days following receipt of a completed permit application, cabinet personnel will conduct an inspection of the site of the proposed land use change to identify and map the occurrences of significant features and other sensitive areas which may require special protective measures.

Section 4. Public Hearing. (1) Within sixty (60) days following receipt of a completed permit application, the secretary, in accordance with KRS 146.290, will hold a public hearing on the application and will notify the applicant of same by certified mail, return receipt requested.

(2) Public notice of the hearing will be given according to the provisions of KRS Chapter 424 and will state the nature and location of the proposed change of use.

(3) At the hearing, any interested party may attend and be represented by counsel and shall be allowed to present evidence as to whether the proposed change of use is consistent with the wild river management plan, the purpose and intent of the Kentucky Wild Rivers Act and other applicable law. The hearing need not conform to the strict rules of evidence as practiced in the courts of the Commonwealth and shall be conducted so as to permit the full development of all relevant issues and to insure that all persons have a fair and reasonable opportunity to be heard.

(4) The hearing shall be recorded, and the application, comments received from the public, and recommendations from government agencies shall be entered into the record. The cost of transcription of the record shall be borne by any party requesting a transcript.

Section 5. Permit Application Review. (1) The secretary shall evaluate all matters on record in light of the provisions of KRS 146.290, and shall further consider:

(a) The possible effects of the proposed new use on water quality, adjacent lands, aesthetics, fish and wildlife, vegetation, geologic features, historical and archaeological sites, recreational values, and endangered and threatened species.

(b) Alternate uses to which the land could be put which would be more consistent with the purposes and intent of KRS 146.200 to KRS 146.360.

(c) Alternate locations, including any outside of the wild river corridor that may be more appropriate for the proposed land use.

(d) The extent to which the proposed change of use or an alternate use conforms to the river management plan developed pursuant to KRS 146.270.

(e) Whether the denial or the issuance of a permit is consistent with the cabinet's mandate to protect the waters of the Commonwealth for the use, welfare and enjoyment of all of its citizens, and with the rights of landowners to the beneficial use of their property.

(f) Any existing laws or administrative regulations which apply generally to the proposed change of use.

(g) Whether the proposed change of use constitutes a threat, directly or indirectly, to public health or safety.

(h) Secondary effects likely to be caused or encouraged by the proposed change of use, such as off-road vehicle use, excessive noise, soil erosion, air or water pollution and economic factors relating to costs of additional facilities or resource protection measures which may be required in the general area in the future as a result, directly or indirectly, of the proposed change of use.

(2) In accordance with KRS 146.290, a written order shall be issued by the secretary within sixty (60) days following the public hearing. The order shall consist of a permit with appropriate standards attached in accordance with 401 KAR 4:140 if the application is approved, specify objections to the application and procedures for appeal if the permit is denied, or recommend an alternate use consistent with the Kentucky Wild Rivers Act. The order shall set forth the finding of fact and conclusion supporting the ruling. The order shall be forwarded to the applicant by certified mail, return receipt requested.

Section 6. Permit Conditions. (1) A permit to conduct a change of use will contain site-specific restrictions, terms and conditions as are appropriate to protect to the fullest extent possible the wild river area and the public trust therein, within the intent of KRS 146.220.

(2) A permit will become effective on the date of issuance and will remain in effect for one (1) year, at which time the permittee shall notify the cabinet in writing as to the status of the new land use. The permit may be renewed annually upon request by the permittee if the new use has remained consistent with the land use plan submitted and has complied with all permit conditions, the provisions of 401 KAR 4:110 to 4:140 and other applicable laws and regulations.

(3) The landowner to whom a change of use permit is issued shall be held fully accountable for compliance with 401 KAR 4:110 to 4:140 and any additional terms and conditions imposed by

the permit.

(4) The permit application and land use plan submitted shall be an instrument for adjudging compliance with the permit. Any changes in the application or land use plan shall require amendment of the permit before such changes are implemented. A permit may be revoked or restricted in the event that the application submitted is found to contain falsified or erroneous information or if conditions of the permit or any of the provisions of 401 KAR 4:110 to 4:140 are violated. Violations shall be subject to penalty as set forth in KRS 146.990.

(5) A change of use permit shall apply to the property for which it was granted and is transferable to any future owner of the property or interest in the property. While the permit is in effect, the permittee shall notify the cabinet of any sale, lease or other transfer of interest in the property to which the change of use applies, and shall make acknowledgment of the permit a condition of the sale, lease or other transfer of interest in the property.

Section 7. Appeal of Secretary's Order. (1) The landowner may file a written objection to the ruling on or before thirty (30) days of the date of its issuance. The written objection shall set forth the basis of the objection and be filed with the Docket Coordinator of the Division of Hearings.

(2) After filing of the written objection, an authorized agent of the secretary shall meet with the landowner and attempt to reach an agreement with respect to a modification of the ruling.

(3) If no agreement is reached within sixty (60) days of filing of the written objection, the secretary shall proceed pursuant to KRS 146.290. (15 Ky.R. 703; Am. 998; eff. 10-26-88.)

401 KAR 4:140. Wild rivers change of use permit standards.

RELATES TO: KRS 146.220, 146.270, 146.280, 146.290, 146.350, 146.990, 151.140

STATUTORY AUTHORITY: KRS 146.270, 151.125, 224.033, 224.045

NECESSITY AND FUNCTION: KRS 146.270 authorizes the secretary to adopt rules and regulations as necessary for the preservation and enhancement of wild rivers as set forth in KRS 146.250, and for control of recreational, educational, scientific and other uses of these areas in a manner that shall not impair them. In such administration primary emphasis shall be given to protecting aesthetic, scenic, historic, archaeological, and scientific features of the area. Under the provisions of KRS 146.290, the select cutting of timber, other resource removal or an agricultural use may be allowed pursuant to regulations promulgated by the secretary upon the granting of a permit under the other provisions of KRS 146.200 to 146.360. KRS 146.290 requires that any permit granted to conduct a change of use shall contain such restrictions, terms and conditions as are appropriate to protect to the fullest extent possible the stream area and the public trust therein within the intent of KRS 146.220. This regulation sets forth minimum performance standards for conducting a land use change in a wild river corridor as necessary to protect the scenic beauty and environmental quality.

Section 1. Applicability. This regulation applies to new land uses, as defined in 401 KAR 4:110, within designated boundaries of a wild river corridor which require a change of use permit from the cabinet. Nothing herein shall be construed as superseding any requirements of other cabinet programs or of other state or federal agencies.

Section 2. Buffer Zones. (1) Other than as necessary to provide river access sites authorized by the cabinet, a change of land use shall be located outside of buffer zones.

(2) Where the adjacent slope is less than forty (40) percent the minimum width of a buffer zone bordering streams and other surface waters shall be 100 feet as measured laterally from the bank of the stream or other surface water. Where the adjacent slope is forty (40) degrees or greater, the buffer zone width shall vary as follows:

Slope of Land (percent)	Minimum Width of Buffer Zone (feet)
40 to 49	115
50 to 59	125
60 to 69	145
70 to 79	165

(3) The boundaries of a buffer zone shall be flagged by the permittee with durable, brightly-colored material prior to the commencement of a permitted change of use.

Section 3. Extent of Disturbance. A new land use shall occupy the minimum area necessary to accomplish the intended use as specified in an approved land use plan.

Section 4. Water Quality. (1) In accordance with the nondegradation provision for outstanding resource waters contained in 401 KAR 5:029(2)(4), background water quality of surface waters within a wild river corridor shall be maintained or enhanced.

(2) Any new discharge of a substance or combination of substances into a surface water within a wild river corridor shall maintain or enhance background water quality in the receiving stream.

(3) Water quality data shall be collected as necessary to document maintenance of background water quality.

(4) The natural flow of water in wild rivers shall be maintained. Water withdrawals shall require a permit as provided in 401 KAR 4:010 and KRS 151.140, and shall not be allowed to impair existing recreational or fish and wildlife uses of the river, nor adversely impact endangered or threatened species.

Section 5. Erosion Control. (1) Best management practices shall be implemented as necessary to control soil erosion and sediment wherever there is ground surface disturbance; sediment shall not be allowed to accumulate in surface waters.

(2) Temporary erosion control measures shall be immediately implemented on all disturbed areas not needed for ongoing operation until permanent control measures can be established, and shall minimally include use of one (1) or more of the following:

(a) All disturbed surfaces shall be graded,



seeded, fertilized and mulched to establish complete vegetative ground cover. Native species of grasses and legumes shall be used wherever conditions allow.

(b) Sediment ponds and filters, such as baled vegetation, shall be used as necessary to trap sediment within disturbed areas. Filter fences may be used in situations where other methods may not provide adequate control.

(c) On slopes of ten (10) percent or more, diversion structures shall be installed uphill of disturbed areas as needed to divert surface run-off into vegetated areas.

(3) Vehicular traffic shall be restricted to the access roads and skid trails approved in the land use plan.

(4) Activities involving the use of heavy equipment shall be suspended during wet soil conditions, and heavy equipment shall be stored outside the corridor when not in use.

(5) During construction activities, storage and disposal of unconsolidated materials shall occur only at locations approved in the land use plan, and topsoil removed from the operation site shall be stockpiled and stabilized for use during reclamation.

(6) Intermittent streams which are tributaries of a wild river may be temporarily impounded or otherwise altered to effect a permitted use. Streambed materials shall not be moved or removed from the streambed of a permanent or intermittent stream for any purpose.

Section 6. Stream Crossings. (1) Vehicular stream crossings shall be prohibited where stream bank slopes exceed ten (10) percent, or where the crossing might otherwise have an adverse impact on the stream environment.

(2) Natural drainages which are not composed substantially of rock shall be accommodated with an appropriately sized drainage relief structure, such as a culvert or temporary bridge, at the point of intersection with a road.

(a) Stream crossings shall occur only at right angles where the stream channel is most narrow and has firm, rocky banks.

(b) Relief structures for crossing a permanent stream shall minimally consist of a closed culvert designed to handle a ten (10) year, twenty-four (24) hour precipitation event, and shall be embedded in clean rock fill and covered by compacted fill to a minimum depth of one (1) foot. The bottom of culverts shall be flush with stream substrates.

(3) As required under KRS 151.250, a permit to authorize construction in a floodplain must be obtained from the cabinet prior to bridge construction if the area of the watershed is one (1) square mile or greater.

Section 7. Access Roads. (1) Existing roads shall be used whenever possible to minimize surface disturbance.

(2) Best management practices for road construction, adopted by reference in 401 KAR 5:200, shall be employed to the greatest extent possible during road construction and maintenance.

(3) Roads shall be routed to follow the existing land contour as closely as possible and to avoid surface waters, floodplains and any areas vital to the preservation of significant features. Except for necessary stream crossings or provision of public access to the river, no portion of any road shall be located in a buffer

zone or streambed.

(4) Roads shall not exceed a maximum grade of ten (10) percent for distances of more than 150 feet. Portions of roads on grades steeper than ten (10) percent shall be graded and surfaced with stable materials such as limestone rock, crushed gravel or other material approved in the land use plan, and shall be sufficiently durable for the anticipated volume of traffic and the weight, and speed of vehicles to be used. Acid or toxin-forming substances shall not be used for road surfacing.

(5) The width of a road shall be appropriate for the anticipated volume of traffic and the size, weight, and speed of vehicles to be used and shall not exceed sixteen (16) feet for single-lane traffic unless special exemption is made on the application.

(6) Vegetation shall not be cleared from an area greater than the width necessary for road and associated ditch construction. Road shoulders shall be seeded in grass cover immediately after construction is completed, and ditches shall be lined with gravel.

(7) Roads constructed to effect a permitted use shall be closed by means of a locked gate located at or near the corridor boundary whenever adverse weather or other conditions cause operation and maintenance of the permitted use to be suspended for an extended period of time.

Section 8. Structures. (1) Structures permitted by the management agency shall be located either:

(a) Beyond the limit of the 100-year floodplain as determined by the division; or

(b) No closer than 250 feet from the nearer bank of the wild river.

(2) Structures shall be screened by vegetation or topographic features so as not to be visible from the nearer bank of the wild river.

(3) Any new dock, boat ramp or other river access facility shall be constructed so as to minimize its intrusion into the river, if any, and shall not substantially impede natural stream flow.

(4) Best management practices for construction shall be used as necessary to control erosion and prevent sedimentation of surface waters.

Section 9. Control of Hazardous Substances.

(1) To the extent not inconsistent with any other applicable law, any hazardous substance used for or resulting from a new land use shall be confined to the smallest practicable area, shall be stored so as to prevent escape as a result of rain, percolation, high water or other cause, and shall be properly and legally disposed of outside of the wild river corridor.

(2) The operator shall immediately notify the cabinet of any accident involving fire, personal injury, discharge or accidental bypass of any hazardous substance within a wild river corridor, and shall submit a written report to the cabinet within forty-eight (48) hours of an accident event.

Section 10. Solid Waste Disposal. Scrap and waste materials used to effect a new land use shall be removed and properly disposed of outside of the corridor immediately after their use is concluded.

Section 11. Visibility. Buildings, facilities and other structures shall be made as inconspicuous as possible by painting or staining in muted tones and, or, by screening with native vegetation. Electric lines shall not be strung across a wild river unless no other option is available, and shall be hidden to the extent possible.

Section 12. Cutting of Vegetation. (1) Any tree cutting required for a new land use, other than the permitted select cutting of timber or a new agricultural use, shall be limited to trees which interfere with the construction or operation of the permitted use, as approved in the land use plan.

(2) Burning of forest vegetation shall be prohibited unless authorized by the Division of Forestry, or the U.S. Forest Service on federal lands, for purposes of disease control or as part of a prescribed burn and shall conform with other applicable provisions of law.

(3) Every effort shall be made to avoid unnecessary removal or trampling of vegetation within a corridor.

Section 13. Operation and Maintenance. All operation and erosion control structures and facilities shall be routinely inspected and maintained by the operator to ensure proper functioning and to prevent the accumulation or accidental discharge of hazardous substances or waste materials.

Section 14. Reclamation. (1) The permittee shall provide written notification to the cabinet immediately upon the conclusion of a new land use and shall begin implementing reclamation measures within thirty (30) days following such notifications.

(2) Reclamation shall involve restoration of all disturbed area to its predisturbance appearance and condition or an improved condition that will enhance natural and aesthetic values.

(3) Reclamation shall be completed within ninety (90) days following conclusion of the new use unless an exception is approved by the cabinet before the ninety (90) day period ends.

(4) All facilities and structures installed for the new use, including temporary erosion control and drainage structures, shall be removed from the corridor, and the natural contours and drainage patterns shall be restored. Culverts and other relief structures may remain if approved by the cabinet to protect the natural and aesthetic values of an area.

(5) Unless otherwise approved in the land use plan, roads constructed for the permitted use shall be reclaimed by effectively blocking the road entrance to vehicular use, removing water control devices, restoring the ground surface to its natural contours, and seeding, fertilizing and mulching the roadbed. Native species of plants approved in the land use plan shall be used wherever conditions allow, and those having wildlife value will be preferred.

(6) Tree species which existed on the site prior to the land use change shall be planted on all areas cleared of trees during the land use change.

(7) Reclamation shall be considered complete when an inspection by division personnel determines that the affected site resembles, as closely as possible, the condition and

appearance of the land and vegetation that existed prior to the land use change.

(8) Failure of the operator to comply with these standards shall be cause for the denial of any future permit to conduct a change of use on land within a wild river corridor involving the operator.

Section 15. Additional Standards Specific to Exploration For and Extraction Of Oil and Gas.

(1) A spill prevention and control countermeasure (SPCC) plan shall be prepared in accordance with 40 CFR Part 112 and implemented before drilling begins. The SPCC plan shall contain a contingency plan for reporting and controlling accidental discharges according to 401 KAR 5:015.

(2) The area of disturbance at each well shall not exceed sixty (60) feet by 100 feet unless otherwise approved in the land use plan.

(3) Prior to drilling, an area forty (40) feet in diameter centered around each well shall be isolated by an earthen dike twelve (12) inches or more in height, and the enclosed ground surface shall be lined with three (3) inches or more of sorbent material.

(4) Acids and other well drilling and cleaning fluids shall be handled in accordance with Section 9 of this regulation.

(5) Blowout prevention equipment shall be installed on wells during drilling.

(6) The permittee shall provide written notification to the division of the planned dates for drilling to provide an opportunity for division personnel to be present on-site during drilling activities.

(7) For air rotary or other dry methods of drilling, dust and other particulate matter blown from the well shall be directed away from surface waters and stockpiled in a manner that will prevent its entry into surface waters as a result of rain, percolation, wind or other cause. Dust may be controlled by injecting water into the air stream at a rate of approximately three (3) gallons per minute. Water and other fluids used in the drilling process shall not be discharged into surface waters.

(8) Whenever drilling or production is suspended for twenty-four (24) hours or longer, all valves and blowout prevention equipment shall be closed.

(9) Storage or loadout tanks shall be equipped with an oil brine separator and a safety valve to prevent accidental overflow of oil, and all valves and other fluid controls shall be kept locked or be removed when the operator is off-site to prevent accidents due to vandalism.

(10) No produced water shall be discharged into surface or groundwaters within a wild river corridor.

(11) Storage of produced water within a wild river corridor shall be in a closed tank having a minimum thirty (30) day storage capacity to prevent accidental discharge. Fluids shall be safely removed from the tank when the tank becomes filled to no more than two-thirds (2/3) capacity and be properly disposed of.

(12) Pits constructed to temporarily hold brine or other fluids produced during drilling shall be located beyond flood plains and other areas prone to flooding, and be constructed according to 401 KAR 5:090, Section 9(5)(a).

(13) Disposal of produced water shall be by reinjection into a disposal well in accordance with 401 KAR 5:090, Section 11, and require an



underground injection control permit as provided for in 40 CFR 146, or shall be transported outside of the corridor and reinjected into an approved disposal well.

(14) Any pipelines leading from pumps to storage or loadout tanks shall be fitted within a second pipe or within an open culvert lined with nonpermeable material that shall act as a catch basin for any accidental discharge of oil or brine.

(15) Pipelines shall be placed as far away as possible from streams and other surface waters, shall follow an access road wherever possible, and shall not be routed across a wild river.

(16) Facilities, roads, collecting lines and other structures shall be inspected daily by the operator when wells are producing to ensure erosion control and prevent accumulations or leaks of oil, produced water or other hazardous substances.

(17) Spills or leaks of oil, produced water, or drilling or cleaning fluids shall be contained by the operator immediately upon discovery, be disposed of outside of the corridor in an approved manner within twenty-four (24) hours of discovery, and be reported to the cabinet in accordance with 401 KAR 5:015 and 40 CFR Part 110.

(18) The operator shall keep sorbent material, fire extinguishers and other firefighting tools readily accessible on the site to control fire or an accidental discharge of oil or produced water.

(19) Trailers, mobile homes or other temporary or permanent structures used to house operation personnel shall not be installed within a wild river corridor.

(20) Reclamation shall include the plugging of all wells in accordance with oil and gas regulations, and the plugging affidavit shall be submitted to the division.

Section 16. Additional Standards Specific to Underground Mining. (1) No surface disturbance resulting from underground mining shall occur within the buffer zones of streams and other surface waters within a wild river corridor.

(2) Drainage from any surface disturbance resulting from underground mining shall be controlled following the guidelines contained in "Best Management Practices for Surface Coal Mining," published in 1984 and adopted by reference herein. Copies of this document can be obtained from the Division of Water, 18 Reilly Road, Frankfort, Kentucky.

(3) Mine surface entrances shall be located outside a wild river corridor wherever possible.

(4) Underground mining shall not be permitted where subsidence or landslide cannot be adequately controlled, if subsidence or surface displacement of soil, rock or other ground material due to mining activities causes an adverse impact to the river or other surface waters within a wild river corridor, the mining operation shall be suspended until such time as the operator has corrected the damage and provided evidence that further subsidence or landslide shall not occur.

(5) A subsidence event shall be reported to the cabinet within twenty-four (24) hours of discovery, the surface impacts of subsidence shall be corrected and the area restored to its previous condition before mining commences. The disturbed area shall be revegetated, using native grasses and legumes wherever conditions

allow, and be thoroughly mulched with straw or other suitable material until a vegetative cover becomes established.

(6) In addition to the standards set forth in this regulation, any roads constructed or improved to effect a mining use shall be in accordance with 405 KAR 18:230, and shall be constructed and maintained using best management practices for mining haul roads. Other transportation systems such as tramways, railroad loops or spurs shall not be allowed within a wild river corridor unless such access would cause less impact on the river environment than any alternative system.

(7) Underground development waste, spoil, coal or other hazardous substances shall be transported to proper storage and disposal areas outside of the wild river corridor, and shall otherwise be handled according to 405 KAR 18:130 and 405 KAR 18:190. No tipplies, processing or refuse areas shall be located within a wild river corridor.

(8) Mine shafts shall not be routed beneath streams and other surface waters in order to avoid subsidence and physical damage to natural surface drainage patterns.

Section 17. Additional Standards Specific to the Selective Cutting of Timber. (1) Timber cutting shall follow to the fullest extent possible the guidelines contained in "Forest Practices Guidelines for Water Quality Management," published July 1980 and adopted by reference herein. Copies of this document can be obtained from the Division of Water, 18 Reilly Road, Frankfort, Kentucky.

(2) A professional forester shall survey and mark all trees to be cut. A minimum residual basal area of not less than sixty (60) square feet per acre shall be left standing and evenly distributed over the harvested area.

(3) The boundaries of the area to be cut shall be clearly marked using paint.

(4) Prior to cutting, all active den trees and at least three (3) mast-producing trees per acre consisting of trees in the largest size class in the stand, shall be marked and left standing.

(5) Tree cutting shall not be repeated in the permitted area at intervals of less than twenty (20) years from the date that reclamation is completed as specified in Section 14(7) of this regulation, unless the landowner has submitted a timber management plan as part of the land use plan, approved by a professional forester, which recommends a shorter interval.

(6) The selective cutting of trees shall be prohibited within buffer zones except to remove diseased or insect-infested trees or those becoming uprooted due to natural causes.

(7) Construction of roads and skid trails shall occur outside of buffer zones, unless less impact would result from using an existing road in a buffer zone and be routed to follow the contours of the land.

(8) Trees used for fastening or attaching cables, guys or other equipment shall be adequately protected from possibly injury.

(9) In hilly terrain, logs shall be skidded uphill where possible, on trails designed and maintained for this purpose using best management practices, and shall not be skidded through surface waters.

(10) The amount of surface disturbance required for construction of roads, skid trails and log landings shall be kept to the minimum

required for such purposes, and the area of a landing shall not exceed 6,000 feet unless and exception is approved in the land use plan.

(11) Log landings shall be located so as to minimize erosion and wherever possible be located on well-drained sites on slopes of less than ten (10) percent. Where necessary, a landing shall be protected from overland flow of water by construction of a diversion ditch on the uphill side to divert water into well-vegetated areas.

(12) Timber shall be cut as close to the ground as is reasonably practicable, with the height of the stumps not to exceed twelve (12) inches above ground on the uphill side of the tree.

(13) Trees shall be cut so as to fall away from streams and other surface waters, rock houses, historic structures and other sensitive areas identified by the division.

(14) Tree tops and other nonmarketable timber slash shall be lopped to within two (2) feet of the ground surface, or chipped and spread on disturbed areas to control erosion. Slash shall be randomly placed within a corridor.

(15) Pesticides and herbicides shall be used in accordance with the land use plan submitted as part of the permit application.

(16) Facilities for processing logs shall be located outside wild river corridor boundaries.

(17) Logging operations shall cease during wet soil conditions.

(18) At the conclusion of the land use change, log landings, skid trails and haul roads shall be reclaimed according to Section 14 of this regulation.

(19) A permit to conduct select cutting of timber shall not be extended more than 180 days beyond the original permit expiration date.

Section 18. Additional Standards Specific to Agriculture. (1) A new agricultural use within a wild river corridor shall follow to the fullest extent possible the guidelines contained in "Best Management Practices for Agriculture," published July 1985 and adopted by reference herein. Copies of this document can be obtained from the Division of Water, 18 Reilly Road, Frankfort, Kentucky.

(2) The removal of trees to effect a new agricultural use shall be subject to all applicable provisions of Section 17 of this regulation.

(3) Where little or no vegetative ground cover exists between the proposed agricultural use and a stream or wetland, native trees and ground cover shall be planted along the banks of the surface water to create buffer zones prior to the commencement of the agricultural use. Plant species will be recommended by the division.

(4) Severely eroded, sediment-producing areas shall be properly stabilized using best management practices for critical areas prior to the commencement of a new agricultural use in an area.

(5) Conservation tillage methods shall be employed to the extent practicable on lands having slopes of ten (10) degrees or greater.

(6) A cover crop shall be planted in cultivated fields during winter and other periods when the cultivated crop does not provide adequate ground cover.

(7) Livestock shall be excluded from buffer zones by fencing or other methods.

(8) Watering areas for livestock shall be

located outside of buffer zones.

(9) The number of livestock per area of pasture shall be estimated in the land use plan and shall be maintained at or below the level necessary to sustain complete ground cover.

(10) Animal wastes shall be properly stored and disposed of in a manner that will prevent their introduction into streams. Spreading of waste over fields as a disposal method shall be avoided during periods of heavy rainfall or frozen soil conditions.

(11) Any pond constructed to hold animal waste shall be located as far away as possible from streams and other surface waters, and be designed to hold the run-off from a twenty-five (25) year, twenty-four (24) hour storm event plus six (6) months of precipitation.

(12) A perennial cover crop shall be planted between trees in orchards and nurseries immediately after the nursery stock is planted.

(13) The use of pesticides and herbicides shall be restricted to those approved in the land use plan, and the use of a persistent, toxic substance shall not be approved if an equally effective, less toxic and less persistent product is available.

(14) Aerial spraying of chemicals shall not be allowed within a wild river corridor.

(15) The cabinet may attach additional standards to a permit authorizing an agricultural use on highly erodible lands.

Section 19. Additional Standards for Recreation Facilities Development. Development of commercial or private recreational facilities within a wild river corridor shall be consistent with wild river management plans, and buildings and other structures shall be located outside of buffer zones wherever possible.

(2) Recreation facilities shall be primitive in design and appearance and constructed of natural or natural-appearing materials that blend with the surroundings.

(3) Recreation facilities shall be designed so as to require minimal ground disturbance and removal of vegetation. (15 Ky.R. 706; am. 1000; eff. 10-26-88.)



APPENDIX I

MEMORANDUM OF UNDERSTANDING  
Between the  
KENTUCKY NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET  
and the  
U.S. DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

Pertaining to the Following Kentucky Wild Rivers:  
Cumberland, Little South Fork of the Cumberland, Red, Rockcastle and Rock Creek

This Memorandum of Understanding, made and entered into by and between the Commonwealth of Kentucky, with the Natural Resources and Environmental Protection Cabinet as its agent, hereinafter referred to as the Cabinet, and the Daniel Boone National Forest, Forest Service, U.S. Department of Agriculture (under the authority of Public Law 90-542, 16 USC 1276 and 16 USC 1282), hereinafter referred to as the Forest Service, is for the purpose of establishing and recording agreed-upon policies and procedures designed to promote and administer the protection, use, and enjoyment of the above named State Wild Rivers.

WHEREAS, the Cabinet is the state agency designated by the Kentucky General Assembly to administer and manage the Kentucky Wild Rivers System, as set forth in the Kentucky Wild Rivers Act (KRS 146.200 to 146.360), as amended, and

WHEREAS, the Forest Service administers the National Forest System, which includes the Daniel Boone National Forest, and is responsible for the management of the resources on the National Forest lands, of which certain responsibilities are nondelegable, and

WHEREAS, it is the mutual desire of the Cabinet and the Forest Service to work in harmony for the common purpose of maintaining and managing these Wild Rivers in a manner that shall benefit the people of Kentucky and of the United States;

NOW, THEREFORE, the parties hereto agree as follows:

A. The Cabinet shall:

1. Recognize the Forest Service as the agency responsible for the administration and management of National Forest lands in Kentucky.
2. Provide orientation on state laws and regulations for Forest Service personnel as requested.
3. On National Forest lands erect no signs, perform no construction and post no land lines except as approved by the Forest Service.
4. Include the Forest Service as a full participant in the study of any streams within the National Forest which are proposed for inclusion in the State Wild Rivers System.

5. Agree that implementation of Wild Rivers management plans on National Forest lands will be coordinated with and meet the direction of the Forest Land and Resource Management Plan (Forest Plan).
6. Provide the Forest Service with the Wild Rivers Program's annual work plan.
7. Consult with and use the Forest Service in the development of regulations for administration of the State Wild Rivers Programs.
8. In the performance of work on National Forest lands, comply with the Equal Opportunity provisions shown in Exhibit A, which is attached and made a part of this agreement. In the Exhibit, Contractor means the Cabinet; Contracting Officer and Contracting Agency mean the Forest Service.
9. Consult with and use the Forest Service as technical advisors during the preparation of state Wild River management plans for subject rivers within the National Forest which are added to the Wild Rivers system.

B. The Forest Service shall:

1. Make every effort to manage National Forest lands within the intent of the Kentucky Wild Rivers Act as amended.
2. Through the Forest Service public notification process, provide the Cabinet with information about the Forest Service annual program of work, and any additional activities within the Wild Rivers corridors.
3. Agree that there are no planned timber sales within the Kentucky Wild River corridors on the Daniel Boone National Forest for the remainder of the Forest Plan period unless otherwise amended. The said corridors are as designated on the maps so labeled in Exhibit B, which is attached and made part of this agreement. If a river is included in the National Wild and Scenic River System, a management guide will be developed to provide direction and become part of the Forest Plan by amendment.

If a river is determined unsuitable for inclusion into the National System by the Secretary of Agriculture, the management will continue under the current direction.

Salvage sales may be conducted as necessary in the event of some disaster such as fire, insect, disease or weather related damage.

4. Consistent with funding, consider acquisition of lands or interests in lands for river management and/or protection.
5. In addition to using the standards and guidelines in the Forest Land and Resource Management Plan, permit the Cabinet to recommend means of protecting the water quality, aesthetics, and other special features identified in the Wild River Management Plan.



6. If designated to study any river within the National Forest boundaries, for eligibility as a National Wild and Scenic River, consult with and include the Cabinet as a full participant with the interdisciplinary study team.

7. Provide to Cabinet personnel an orientation on National Forest management goals and the Forest Land and Resource Management Plan as requested.

8. Make available National Forest land ownership maps if requested.

9. Follow the Forest Land and Resource Management Plan for direction in managing National Forest lands within the state Wild Rivers corridors.

C. The Cabinet and Forest Service mutually agree:

1. The management of National Forest lands will be according to the Forest Land and Resource Management Plan.

2. To cooperate in the exchange of routine information related to the management of Kentucky Wild Rivers.

3. To cooperate to improve access, safety and information for the Kentucky Wild Rivers.

4. No contribution herein provided shall entitle the depositor to any share of interest in the said project other than the right to use the same under regulations of the Forest Service. Improvements on National Forest lands shall be and remain the property of the United States.

5. Nothing herein shall be construed as obligating the Forest Service or the Cabinet to expend, or as involving the United States or the Commonwealth of Kentucky in any contract or other obligation for the future payment of money in excess of appropriations authorized by law and administratively allocated for this work.

6. Nothing herein contained shall be construed as limiting or affecting, in any way, the authority of the Forest Supervisor in connection with the proper administration and protection of the National Forest, in accordance with the purpose for which the lands contained therein were acquired and reserved.

7. Nothing herein contained shall be construed as limiting or affecting, in any way, the authority of the Secretary of the Cabinet in properly administering and protecting State and private lands within the Wild River corridors, in accordance with the purpose and intent for which the lands contained therein were acquired or reserved.

8. No member of, or delegate to Congress or Resident Commissioner shall be admitted to any share or part of this agreement, or to any benefit to arise therefrom; but this provision shall not be construed to extend this agreement, if made with a corporation for its general benefit.

9. Public information materials and signs on rivers where there are National Forest lands and waters will inform the public about the cooperation between the Cabinet and Forest Service. The purpose of the material will be to inform the public about the Wild Rivers program, and safety.
10. Each agency will be responsible for acquisition of lands within Wild Rivers corridors. Periodically, ownership will be examined and lands may be exchanged to provide for consolidation of State and National Forest ownership.
11. The Forest Service and the Cabinet shall exercise their respective authority to regulate the public use of streams flowing through National Forest land. This exercise of authority shall not preclude the State from regulating the taking of fish and game or exercising any other authority not otherwise preempted by Federal law, nor shall this authority be deemed to affect the rights of the State or the Federal government regarding the ownership of submerged lands or the navigability of any streams within the State Wild Rivers System.
12. Each and every provision of the Memorandum of Understanding is subject to the laws of the Commonwealth of Kentucky and the laws of the United States.
13. This Memorandum of Understanding supersedes all previous Memorandums of Understanding pertaining to State Wild Rivers.
14. That this Memorandum of Understanding is not intended, nor shall it be construed, to give rise to any cause of action, in law or equity, between the parties hereto or any third party.
15. Amendments to the Memorandum of Understanding may be proposed by either party and shall become effective upon approval by both parties.
16. Either party may terminate this Memorandum of Understanding by providing 90 days written notice, following agreed upon disposition of all improvements constructed under the terms of this memorandum. Unless terminated by written notice, this agreement shall remain in effect indefinitely.

IN WITNESS WHEREOF, the parties have executed this Memorandum of Understanding,  
as of the last date written below.

W<sup>m</sup> Guy Hart, Jr

William G. Hart, General Counsel  
Office of General Counsel  
Kentucky Natural Resources and  
Environmental Protection Cabinet

12/28/87

Date

Mary Helen Miller

MARY HELEN MILLER, Secretary  
Kentucky Natural Resources and Environmental  
Protection Cabinet

12/29/87

Date

Richard H. Wengert

RICHARD H. WENGERT, Forest Supervisor  
Daniel Boone National Forest  
Forest Service, U.S. Dept. of Agriculture

10/30/87

Date

## EQUAL OPPORTUNITY

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*(The following clause is applicable unless this contract is exempt under the rules, regulations, and relevant orders of the Secretary of Labor (41 CFR, Ch. 60).)*

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During the performance of this contract, the Contractor agrees as follows:

- (a) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Contracting Officer setting forth the provisions of this Equal Opportunity clause.
- (b) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.
- (c) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency Contracting Officer, advising the labor union or workers' representative of the Contractor's commitments under this Equal Opportunity clause, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- (d) The Contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- (e) The Contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- (f) In the event of the Contractor's noncompliance with the Equal Opportunity clause of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated or suspended, in whole or in part, and the Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

*Continued on reverse*



## APPENDIX J      REFERENCES

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Appendix K  
Mitigation for avoiding adverse effects  
to PETS Species

Proposed, Endangered and Threatened Species

**Establishment of a Monitoring Program**

A. Establish a general permanent monitoring program to track recreational use and habitat conditions for listed species in the proposed project areas.

Programs to allow the regular permanent monitoring of water quality, recreational use, maintenance of river values, and general condition of the landscape along all designated project corridors will be established.

B. Establish a monitoring program for listed species.

B-1. Introduction to monitoring.

Monitoring occurs at three levels: implementation, effectiveness and validation. Implementation monitoring asks if a task was completed. Effectiveness monitoring asks if the task goal was achieved. Validation monitoring asks what occurred as a result of the completed task.

Monitoring plans for PET species potentially adversely affected by river designation involves all levels. To implement the Forest Plan, Wild, Scenic and Recreation River studies have been performed. The river studies are approaching completion - at which time effectiveness monitoring begins. To implement the Forest Plan, and specifically to avoid harm to PET species, information is gathered about the location and condition of PET species sites. Checks of surveys indicate effectiveness monitoring in place for PET species.

B-2. Specific monitoring plans.

The following monitoring plans provide Forest Plan implementation monitoring (PET species information) and Rivers project validation monitoring (effects of the designation on PET species.)

Arenaria cumberlandensis - No monitoring will be done for this species; the population is presumed to have been extirpated shortly after it was discovered. The discovery of a population in any of the corridors will result in the immediate development and implementation of an acceptable monitoring program for the species by the Forest Botanist and the Forest T/E Biologist.

Spiraea virginiana - Populations will be monitored at least once per year during the growing season for the first three years following project implementation. This will provide baseline data against which further changes can be measured. After this has been accomplished, the need for additional monitoring will be evaluated by a team consisting of appropriate biological and recreational personnel, and further recommendations will then be made. The Forest Botanist, Forest T/E Biologist, or appropriate Recreation personnel (to be trained) will conduct the initial monitoring. Stem number and flowering/fruitlet condition will be evaluated and recorded in the field and filed with the Forest Botanist and Forest T/E Biologist. The locations of

colony sites will be indicated on confidential river corridor maps for use by Forest Service personnel.

At all known colony sites, evidence of trampling, footprints, trash accumulation, camping, and other human disturbance will be recorded during routine visits to the corridor by FS recreation personnel checking on general resource conditions. Results will be transmitted to the Forest Botanist and Forest T/E Biologist at appropriate time intervals.

Phoxinus cumberlandensis - Population monitoring at the one known location (and at any others subsequently discovered) will take place annually for the first three years after project implementation, during the species' breeding season (May-July), as stream flow conditions permit. Sites will be electroshocked using a Smith-Root Model 12 Backpack Shocker or the equivalent (alternating current) and using timed sampling methodology so that populations can be compared from year to year. Stream sections sampled will be marked unobtrusively in the field to ensure consistency in the sampling effort. The stream corridor will be visually examined for evidence of high recreational use or for evidence of ongoing seining or trapping for minnows by fishermen or bait dealers.

This will provide baseline data against which further changes can be measured. After this has been accomplished, the need for additional monitoring will be evaluated by a team consisting of appropriate biological and recreational personnel, and further recommendations will then be made. The Forest Fishery Biologist, Forest T/E Biologist, and/or appropriate Recreation personnel (to be trained) will conduct the initial monitoring.

Falco peregrinus - No monitoring is planned at this time since the peregrine falcon is thought to have been extirpated as a breeding species along the Rockcastle River corridor prior to 1940. Reports of peregrines will be investigated as they come in, however, and a monitoring program will be established if birds are found using the corridor during the nesting season.

Villosa trabalis - Populations will be monitored at least once each year (late spring and/or early fall) by snorkling and/or using glass bottomed buckets. Occupied mussel beds will be marked into quadrats and searched visually for specified lengths of time. This will provide baseline data against which further changes can be measured. After this has been accomplished, the need for additional monitoring will be evaluated by a team consisting of appropriate biological and recreational personnel, and further recommendations will then be made. The Forest Fishery Biologist, Forest T/E Biologist, and/or appropriate Recreation personnel (to be trained) will conduct the initial monitoring.

Forest lands adjacent to and immediately upstream from mussel beds will be visually examined to check for evidence of trail development by horseback riders or OHV users. If these are found, appropriate measures will be taken to close and reclaim them to prevent damage to mussel/ host fish habitat.

[NOTE: Mussel beds in the Rockcastle River are presently being intensively surveyed and inventoried by means of a Challenge Cost Share Contract between the USDA Forest Service (Daniel Boone National Forest) and the Kentucky State Nature Preserves Commission. During the summer of 1992, the portion of the Rockcastle River bordering the London Ranger District is to be inventoried. This information will give us the location and species composition of the beds and enable a better decision to be made on how and where to monitor the mussels.]

### C. General Use of monitoring data.

In the event that recreational activities are found to be impacting federally listed species or their habitats on federal lands along any of the proposed river corridors, steps will immediately be taken to eliminate the cause of those impacts. Those steps will be worked out promptly and cooperatively with representatives from the Forest Service, KDFWR, and the USFWS.

The implementation of a monitoring schedule for overall habitat conditions and for all federal listed species along the corridors should allow the timely identification and elimination of factors that lead to incidental take, resulting in the increased protection of colonies of listed species despite any increase in human visitation that might result from the designation of these river segments as Wild, Scenic, or Recreational.

### SVC Forest Sensitive species

#### Establishment of a Monitoring Program

A. Upon project designation, the DBNF will establish a monitoring program for all SVC Forest Sensitive and Proposed Sensitive species that might be impacted by the designation of these corridors and the corresponding predicted increase in human recreational use of the corridors. In the event that the increased recreational use is found to be adversely affecting any or all of the species that are being monitored, the Forest will attempt to identify the offending activities and control or eliminate these activities from the project corridors.

#### B. Monitoring Procedures.

The following monitoring procedure will provide Forest Plan implementation monitoring (Forest Sensitive and Proposed Sensitive species information) and Rivers project validation monitoring (effects of the project on these species).

Each of the species listed below will be monitored in some way for a period of three years following project implementation (designation) in the segment(s) in which each species occurs. This will provide some baseline data concerning the condition and general trend of the population and on the overall condition of the habitat that the population occupies. This data will be compared with additional information that will be gathered concurrently concerning the recreational use of each designated segment and any general signs of wear and tear along each designated corridor that is associated with recreational use. At the present time, no data is available concerning current (i.e. without designation) recreational use of the proposed corridors.

All monitoring will be conducted by DBNF Wildlife and/or Recreation staff and/or by trained cooperators or contractees. For plants, DBNF Wildlife personnel will accompany and train Recreation staff at least initially until they know how to recognize each Sensitive species in the field and learn how and where to search for sign of habitat degradation. For animals, DBNF Wildlife personnel will conduct all of the actual population surveys although others may search for evidence of vandalism or declines in habitat quality.

Site- or species- specific forms or checklists will be developed to ensure the proper continuity of information gathered during monitoring. At the end of the



initial three year period, a meeting will be held between the Wildlife and Recreation staff, the USFWS, KDFWR, KSNPC, and other interested parties to determine whether or not adverse impacts to rare species or their habitats were occurring as a result of designation and whether or not individual species monitoring should continue for any or all Forest Sensitive species along the designated corridors. The possibility of monitoring Forest Sensitive species by merely monitoring recreational use and/or habitat condition would also be discussed at that time.

### C. Specific Monitoring Plans.

Individual species and habitat condition monitoring is proposed for the following set of Forest Sensitive and Proposed Forest Sensitive species:

#### Plants

Aster saxicastellii (Rockcastle Aster) - Populations will be monitored monthly during the growing season by counting individual plants and noting their condition (rosettes; bolting; flowering; fruiting; etc.). Site conditions (evidence of trampling; camping and fire-building; trash accumulation; erosion; etc.) will be recorded.

Comptonia peregrina (Sweet Fern) - Populations will be monitored monthly from May to September. Individual plants and their condition will be noted and site conditions will be recorded as discussed above.

Cypripedium kentuckiense (Kentucky Lady's Slipper) - Populations will be monitored monthly from May to September. Individual plants and their condition will be noted and site conditions will be recorded as discussed above.

Platanthera integrilabia (White Fringeless Orchid) - Populations will be monitored monthly from May to September. Individual plants and their condition will be noted and site conditions will be recorded as discussed above.

Podostemon ceratophyllum (Riverweed) - Populations will be monitored monthly from May to September as water conditions allow. Individual colonies at each site will be mapped and measured, and their size will be recorded.

Solidago spathulata (Spoon-leaved Goldenrod) - State Heritage "A" rank sites will be monitored monthly, May to October. Individual plants and their condition will be noted and site conditions will be recorded as discussed above.

#### Animals

Alasmidonta atropurpurea (Cumberland Elktoe) - Populations will be monitored at least once each year (late spring/early fall) as water conditions permit by snorkling and/or using glass bottomed buckets. Occupied mussel beds will be marked, divided into sections, and carefully searched for specified lengths of time.

Epioblasma capsaeformis (Oyster Mussel) - Populations will be monitored at least once each year (late spring/early fall) as water conditions permit by snorkling and/or using glass bottomed buckets. Occupied mussel beds will be marked, divided into sections, and carefully searched for specified lengths of time.



[NOTE: Mussel beds in the Rockcastle River are presently being intensively surveyed and inventoried by means of a Challenge Cost Share Contract between the USDA Forest Service (Daniel Boone National Forest) and the Kentucky State Nature Preserves Commission. During the summer of 1993, the portion of the Rockcastle River bordering the London Ranger District was to be inventoried. This information will give us the location and species composition of the beds and enable a better decision to be made on how and where to monitor the mussels.]

Etheostoma cinereum (Ashy Darter) - Population inventory will take place yearly during or near the breeding season as water conditions permit; a Smith-Root backpack shocker or minnow seine will be used.

Etheostoma nigrum susanae (Cumberland Johnny Darter) - Population inventory will take place yearly during or near the breeding season as water conditions permit; a Smith-Root backpack shocker or minnow seine will be used.

Notropis sp. (Sawfin Shiner) - Population inventory will take place yearly during or near the breeding season as water conditions permit; a Smith-Root backpack shocker or minnow seine will be used.

Plecotus rafinesquii (Rafinesque's Big-eared Bat) - Winter colony sites will be monitored by direct counts of hibernating individuals during cold weather periods in January or February.

#### D. Use of monitoring data.

In the event that recreational activities are found to be impacting federally listed or SVC species on federal lands along any of the proposed river corridors, steps will immediately be taken to identify and eliminate the cause(s) of those impacts. Those steps will be worked out promptly and cooperatively with representatives from the Forest Service, appropriate State Agency personnel, and the USFWS.

The implementation of a monitoring schedule for all federal listed and SVC species along the corridors should allow the timely identification and elimination of factors that lead to incidental take, resulting in the conservation of colonies of these species despite any increase in human visitation that might result from the designation of these river segments as Wild, Scenic, or Recreational.



Appendix L  
Economic Analysis of Social Impacts

Effects to Timber Related Jobs,  
if Areas in Alternatives are Found  
Unsuitable for Timber Management

- ASQ = Allowable Sale Quantities
- MBF = Million Board Feet
- Annual Allowable Sale Quantity at the time of study is 35 MBF.\*
- Employment Coefficient is 7.6 timber related jobs for every MBF cut on National Forest Land in Kentucky.\*\*

Alternative 1

No potential loss of timber related jobs due to designation, with the possibility of some or all of the area designated would be found unsuitable for timber management.

Alternative 2

Area in corridors proposed for designation represent 2.5% of area presently considered as suitable for timber management.

2.5% of 35MBF = 0.88MBF potential reduction per year.  
0.88MBF X 7.6 jobs/MBF = 6.7 jobs potentially lost.

Alternative 3

Area in corridors proposed for designation represent 0.7% of area presently considered as suitable for timber management.

0.7% of 35MBF = 0.25MBF potential reduction per year.  
0.25MBF X 7.6 jobs/MBF = 1.9 jobs potentially lost.

Alternative 4

Area in corridors proposed for designation represent 0.5% of area presently considered as suitable for timber management.

0.5% of 35MBF = 0.18MBF potential reduction per year.  
0.18MBF X 7.6 jobs/MBF = 1.4 jobs potentially lost.

Alternative 5

Same as Alternative 2. Area difference is not significant.

\* Information from Wenard Weaver - Forest Silviculturist

\*\* Information developed by Dick Brantigon, Logging Engineer, for Timber Sale Program Information Reporting System (TSPIRS).

Effects to Recreation Related Jobs  
By Alternative

Alternative 1

Estimate of recreational use on river segments found eligible. \*.

Cumberland River	16,400 RVD's
Rockcastle River	7,900 "
Rock Creek	42,500 "
Marsh Creek	4,300 "
Total	71,100 RVD's
	X 0.00167 Recreation Related Jobs per RVD**
Total	118.74 Recreation Related Jobs

No potential increase in recreation related jobs due to designation.

Alternative 2

	118.74 Recreation Related Jobs
	X 2.0% Potential increase*** in RVD's due to designation
Total	2.4 jobs = Potential increase in Recreation related jobs

Alternative 3

Rock Creek	42,500 RVD's
	X 0.00167 Recreation Related jobs per RVD
Total	70.98 Recreation related jobs
	X 2.0% Potential increase in RVD's due to designation
	1.4 jobs = Potential increase in recreation related jobs

Alternative 4

Marsh Creek	4,300 RVD's
	X 0.00167 Recreation Related Jobs per RVD
Total	7.18 Recreation Related Jobs
	X 2.0% Potential increase in RVD's due to designation
	0.14 jobs = Potential increase in recreation related jobs

Alternative 5: All eligible segments except 1.9 mile southern segment of Marsh Creek.

	70,600 RVD's
	X 0.00167 Recreation Related Jobs per RVD
	117.90 Recreation Related Jobs
	X 2.0% Potential Increase in RVD's due to designation
	2.4 jobs = Potential increase in recreation related jobs

\* Recreation use from Appendix E in Draft EIS, 1992 estimates.

\*\* Jobs/RVD generated using the MicroIMPLAN model with 1990 economic data for the counties within the Daniel Boone National Forest area of influence.

\*\*\* A slight increase in recreational use due to designation is interpreted as a 2% or less increase. Supported by Richard Greenhalgh, USFS Southern Region Office Economist



NOTES:

The United States Department of Agriculture (USDA) Forest Service is a diverse organization committed to equal opportunity in employment and program delivery. USDA prohibits discrimination on the basis of race, color, national origin, sex, religion, age, disability, political affiliation, and familial status. Persons believing they have been discriminated against should contact the Secretary, U.S. Department of Agriculture, Washington, DC 20250, or call 202-720-7327 (voice), or 202-720-1127 (TDD).

Management Bulletin R8-MB 69

August 1994



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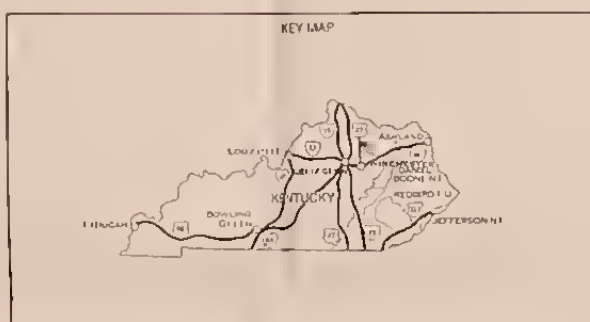
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## LEGE

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|--|------------------------|--|-----------------------------|--|----------------------------|
|  | National Land Boundary |  | National Land               |  | Intercity Highway          |
|  | Purchase Land Boundary |  | Dog and Dogger Office       |  | U.S. Highway               |
|  | Special Tax Boundary   |  | Based on Sale, Land Service |  | State Highway              |
|  | Artery Highway         |  | Land Service Facility       |  | Local Road                 |
|  | Secondary Highway      |  | Permanent Control Station   |  | Local Road                 |
|  | Improved City Duty     |  | Nearest Control Station     |  | Other County Control Point |
|  | Unimproved Duty        |  | Road                        |  | Busing School or Church    |
|  | Local                  |  | State Land                  |  | County                     |
|  | Nearest Control Point  |  | Local Land                  |  | County                     |

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The United States Department of Agriculture (USDA) Forest Service is a diverse organization committed to equal opportunity in employment and program delivery. USDA prohibits discrimination on the basis of race, color, national origin, sex, religion, age, disability, political affiliation, and familial status. Persons believing they have been discriminated against should contact the Secretary, U.S. Department of Agriculture, Washington, DC 20250, or call 202-720-7327 (voice), or 202-720-1127 (TDD).

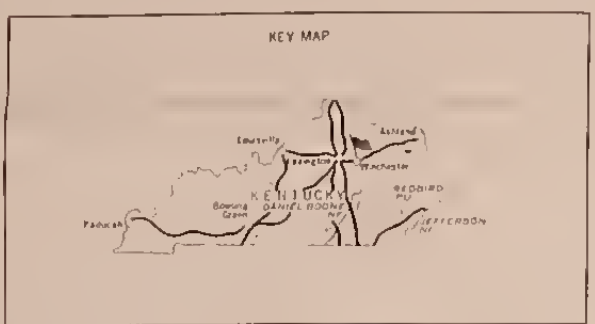
Management Bulletin R8-MB 69

August 1994









DANIEL BOONE III SOUTH HALF RECREATION SITES	LOCATION	FACILITIES				ACTIVITIES			
		TRAIL AREA	CAMPING UNITS	TRAILER STAGE	WATER SANITARY FACILITIES	BOAT LAUNCH	COCKLE SHEDS	DINING WATER	RECREATION
Alpine	0.1								
Alan Ford	0.2								
Bald Rock	0.3								
Bark Camp	0.4								
Bee Rock	0.5								
Grass Meadow	0.6								
Bon Hollow	0.7								
Cotton Patch	0.8								
Crane Creek	0.9								
Flattop Ridge	1.0								
Hemlock Grove	1.1								
Hightop Ridge	1.2								
Holly Bay Ridge	1.3								
Laurie Bridge	1.4								
Little Falls	1.5								
Mouth of Laurel	1.6								
Natural Arch Scenic Area	1.7								
Rockcastle	1.8								
S-Turn	1.9								
Sims Branch	2.0								
Star Creek	2.1								
Straight Creek	2.2								
Turkey Foot	2.3								
Twin Branch	2.4								
White Oak	2.5								
Yahoo Falls	2.6								

U.S. DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
H. MAX PETERSON, CHIEF  
**DANIEL BOONE NATIONAL FOREST**  
(SOUTH HALF)  
**KENTUCKY**  
1981

Scale 1" = 1 Mile  
0 1 2 3 Miles  
0 1 2 3 Kilometers

- LEGEND**
- |                                  |                         |
|----------------------------------|-------------------------|
| — National Forest Boundary       | — Primary Highway       |
| - - - Purchase Unit Boundary     | — Secondary Highway     |
| - - - Special Area Boundary      | — Improved Road         |
| - - - National Forest Land       | — Private Road          |
| ▲ District Ranger Office         | — Trail                 |
| ▲ Recreation Site Forest Service | — Interstate Highway    |
| ▲ Primitive Campsite             | — U.S. Highway          |
| ▲ Forest Service Facility        | — State Highway         |
| ○ Lookout Tower                  | — Forest Road           |
| ▲ Horizontal Control Station     | — Forest Trail          |
| ▲ Mine, Quarry or Gravel Pit     | — Cemetery              |
| ▲ Ship Mine                      | — Church, School, House |
- Forest Supervisor's Headquarters: Woodbury, KY

SOUTH FORK STATION CAMP

WAR FORK

**WILD AND SCENIC  
RIVERS  
SUITABILITY STUDY**

**Classification  
of  
Eligible Rivers**

**LEGEND**



**Scenic River**



**Recreational River**



**Recreational  
(Mostly Private)**

CUMBERLAND

MARSH CREEK

ROCK CREEK

KENTUCKY  
TENNESSEE





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